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THE PROBLEM OF METAPHYSICS.[1]

MANY tendencies in recent thought indicate a revivified interest in the problem of metaphysics. While philosophers for the last few decades have never wholly neglected the problem, their treatment has been, until very recently, largely historical. Old theories have been restated in the light of renewed study, but the statements have usually followed traditional lines which had become fixed. There have been few instances of attempts to state and solve the metaphysical problem as an immediate problem of human experience. But the recent work in logic and epistemology, with its return to the immediate facts of life for its subject matter, has tended to turn our attention to the same source for the study of metaphysics. The work of science in criticising its fundamental conceptions has been largely metaphysical in its character, even when writers like Mach and Brooks repudiate, with feeling, the imputation. *Energy* begins to take its place along with *matter* and *spirit* as a metaphysical concept indicative of the nature of reality. These newer tendencies have something of scorn for traditional and historical philosophy. With a boast, akin to that of Descartes, they would claim to be without presupposition, without hypothesis, and without substantial dependence on the past. But this is an idle boast. These newer tendencies are what they are because of the history of thought which has preceded them. They get their freshness because much of the work of the past has won general recognition, and it is, consequently, possible to

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proceed without the preliminary critical discussions which have characterized the historical method. It is this fact which gives to the outlook for metaphysics its encouraging character. The study of history has taught us much, and we begin to find ourselves in a position, where, with this knowledge as a basal possession, we can restate the problem of metaphysics with immediacy and directness. These considerations have led me to attempt the suggestion of this restatement in the light of the lessons we have learned from the historical treatment of the problem.

The history of philosophy has, in the main, been dominated by two ideas, those of evolution and classification. The great systems have been presented in their mutual antagonisms, dependencies, and supplementations, as moments in an historical development; and they have been classified in accordance with a nomenclature traditionally accepted and rendered almost classic by treatises on the introduction to philosophy. But we have at last begun to be suspicious of the result. Aristotle reads so much like a modern that we can conceive his writing after Hegel with no great change in his system. And we look in vain for the thorough-going materialist, spiritualist, pantheist, and the rest, of traditional phraseology. The great men refuse to be classified in this ready way, and persistently present us with conceptions which the evolutionist has told us could not possibly have been entertained in their time. The recognition of these things is bringing us freedom, so that we no longer find it necessary to regard our work as merely the next evolution out of the unfolding process, or to classify ourselves under some department of the traditional scheme. We would drink deep of the past, and, so invigorated, proceed to our task with the independence and originality of which we may be capable. But we proceed with the experience of the past behind us, and with the lessons of its history.

We have learned not only that the great systems of the past refuse to be classified in accordance with the traditional characterizations, but also that these characterizations cannot stand for us for any adequate description of ultimate positions. The types

of metaphysics, made classic by our terminology, seem to render reality, as Professor James is fond of pointing out, implicitly or explicitly an accomplished fact at one stroke. They thus do violence to experience, in that they leave no room for its movement, its novelty, its variability. Just for this reason they have never won the unqualified approval of anybody. They have gained their absoluteness of statement only by insisting on our ignorance of the very conditions on which such absoluteness is made to depend. They have insisted that they would be satisfactory if only we had the knowledge to make them so. If we only knew enough about the nature of matter or spirit, we should then see how everything is somehow their result. But we have become at last bold enough to say, that just because we do not know that much, and apparently can never know it, we will not let our ignorance determine the character of our metaphysics. We desire firmer ground to stand on, and shrink no more aghast before objections and arguments that rest on unverifiable hypotheses. We will take raw experience as ultimate, before we will bow to any theory which radically changes its evident character. So we have learned that the classification of metaphysical systems, such as Paulsen has laid down in his *Introduction*, for instance, does not indicate the lines we must follow, or the names by which we must be be called.

We have learned also that the gulf set between appearance and reality, and between the subjective and the objective, has resulted in our stultification rather than in our enlightenment. The meaning of the reduction of everything we know to the phenomenal or the subjective has at last dawned upon us. It is, indeed, a revelation, but not the revelation it was supposed to be. Instead of turning out to be an ultimate characterization of what we know, it has turned out to be a recognition that we have returned to our point of departure. For the reduction of everything to one character whose opposite has been so shut out from us that we can neither know nor formulate it, makes of that opposite something which we do not need and cannot value ; and it gives to what we do have its old primary interest and its old need of metaphysical handling. The assertion that we can have no metaphysics, no

insight into the nature of reality, is only the recommendation to begin metaphysical inquiry anew along lines which will not lead to this stultifying result. Absolute phenomenalism, subjectivism, and solipsism are to be rejected, not because they are false, but because they are meaningless and barren of all enlightenment. To be of value, the distinction between appearance and reality, the subjective and the objective, the single ego and its other, must be so understood as to render the implied opposition clear and illuminating. So we have learned that the reduction of everything to a character which has no intelligible opposite, is not metaphysics.

We have learned also the desirability and necessity of having a metaphysics which rests on its own foundation, in as complete independence as possible. Here the reversal of history is interesting and instructive. There was a time when science and religion had to fight long and hard for their independence of metaphysics. Now, we have to contemplate the struggle of metaphysics to free itself from science on the one hand and from religion on the other. We have, in my opinion, looked with a too jealous glance on science and its achievements. We have coveted a name which has won distinguished glory apart from our participation and aid. We have blushed at the imputation of not being scientific in our work. We have sought to make metaphysics a result of science, an outgrowth from it, a rounding out of it, a sort of sum-total and unity of all scientific knowledge. We have done these things, but we are beginning to realize, and the great systems of metaphysics have taught us this, that we have a claim of our own to recognition quite independent of the revelations of science, a birthright by no means to be despised. It may be unfortunate that so useful and general a term as *science* should have come to have its present restricted meaning. Yet, on the whole, I am inclined to think that the distinction has been a gain, and, for my own part, would plead for a fuller recognition of it. I modestly shrink from a calling that imposes upon me the necessity of completing the fragmentary work of the physicist, the chemist, and the biologist, or of instructing these men in the basal principles of their respective sciences.

My work lies in a totally different sphere, deals with totally different problems, and can be pursued in independence of them as much as they pursue their work in independence of me. There is scientific knowledge and there is metaphysical knowledge, and these two are widely different. They involve different tasks and different problems. Science asks for the laws of existence and discovers them by experiment. Metaphysics asks for the nature of reality and discovers it by definition.

The recognition of this difference is a great gain. It points at once to a need of method on our part. But a method, as Professor Ormond has pointed out, "is not defined fundamentally when we say that it is either deductive or inductive, synthetic or analytic. The real nature of a method is determined only when we bring to light the underlying concepts and presuppositions on which its procedure rests." We need for definition a method which will do just that; and that method, in proportion to its perfection, will distinguish still more clearly science from metaphysics. A definition of reality is that at which metaphysics aims, and the introduction to the attainment of that end is the method or logic of definition. The recognition of this is to secure for metaphysics something of that independence which it deserves. To be sure, the different departments of knowledge cannot proceed in absolute independence of each other and succeed. But there is a relative independence for each specific branch growing out of consideration of the concepts and underlying presuppositions on which that branch rests. This is the independence which metaphysics should have, and I think we may call that day happy when the metaphysician recognizes that his work lies in a restricted field. He will glory then in a distinction of his own without sighing for that other glory which is the scientist's pride.

Metaphysics needs to be equally independent of religion. Kant did us a world of harm by his renewed insistence that the three things with which metaphysics has fundamentally to do, are God, freedom, and immortality. These may turn out to be legitimate subjects of metaphysical inquiry, but to admit them as the sole and basal subjects, is to prejudice the definition of real-

ity at the outset. The suspicion and the hope that metaphysicians are really poets or theologians in disguise should both be dispelled. And to that end, the emotional atmosphere should not be that in which the philosopher does his work. That work may turn out to have emotional value of the highest kind, but such value is not his aim. His definition of reality may show what the reality of God must be, but of itself that may imply no more than the exhibition of what the reality of the yet unrealized future must be. It is doubtless an excellent thing that philosophers busy themselves so much about the meaning and content of religion, but in doing this they are only doing their duty as men, not their duty as metaphysicians. The motive which leads to metaphysical inquiry is as purely theoretical as that which leads to scientific inquiry. Ultimately both must react upon human life for its perfecting. Yet in the pursuit of knowledge we must recognize the relative independence in aim and method.

We have learned also that metaphysical knowledge is, in large measure, non-explanatory in character. Of course, all knowledge aims at some sort of explanation; but there is a very wide difference between explanation by definition, and explanation by laws of connection. The phenomena of existence in all their manifold interdependence may be left untouched by metaphysics. The definition of reality may leave unformulated and unknown the general and specific laws of the occurrence of events. That is quite true historically. The method of metaphysics has not given us the laws of any of the sciences. But metaphysical inquiry is not thereby rendered useless. Let the 'soul' or the 'will' be a metaphysical concept, and we cannot say that the clarification of that concept has given us a single law of the connection of mental processes. The concept of purpose occurs repeatedly in much of our thinking, but it does not explain how the spider spins its web. The history of science has been, in one of its aspects, the history of the rejection of concepts that do not explain by leading to the formulation of laws. But these concepts may turn out to be the ones most important for a definition of reality. Indeed, they may reveal a truth of the greatest

significance, namely, that metaphysics is non-explanatory in the sense in which these concepts are such. They may free us from the besetting prejudice of metaphysicians, that a knowledge of reality is itself quite sufficient for all the uses of man, both speculative and practical. And not only that: they may also reveal their own use as concepts which we still must retain in order to preserve sanity in our thinking, to keep it from being absolutely detached and meaningless. One of the most significant illustrations of this is the concept of purpose. We may deny design in nature, we may reject final causes as explanations of existence; but we cannot define a single problem, isolate a single field of inquiry, determine the requisites of the solution of a single question without this concept as the determining factor. So deep seated in all our thinking does it disclose itself, that we are tempted to say it defines the nature of reality in at least one of its essential characters. It has, therefore, that much use. If this use is for a moment thought to have only speculative validity, that need not abash us, for speculative validity has everywhere high importance in the realm of science, no less than in that of metaphysics. But it has also the greatest practical importance. It validates the purposeful life of man. It fills nature with a content of surpassing value. It makes human history worth the reading. Admit that it does not explain, but admit also that it does define. This admission may tentatively carry with it that of the general proposition, that much of metaphysical knowledge, just because it is knowledge by definition, is non-explanatory in the sense in which laws explain.

Once more; we have learned that the distinction between epistemology and metaphysics is apt to be quite valueless, even if it has proved to be methodically useful. The history of this distinction and its bearing on metaphysical inquiry is full of suggestiveness. The great work of Kant cannot be too highly valued. He has done more to clarify our view of philosophical problems than any other philosopher. In his attempt to determine and define precisely what it is to know, we find a field for the most important logical inquiry. But Kant's metaphysical conclusion does not appear to follow necessarily from his critical

analysis. For the discovery that knowledge can be defined in independence of its object, that so defined it is not representative, but synthetic, constitutive, and regulative in character, does not enlighten us at all as to the metaphysical bearing of this discovery. When once knowledge is defined from an analysis of its own nature, there still remains the question, Does knowledge apply with success to any concrete content? If this question is not raised, the results of epistemology are without great significance. Knowledge may be a regulative and constitutive synthesis in time and space, in the categories, in apperception, and in reason; but if things-in-themselves will submit to such a synthesis, they cannot be so shut out from our experience as Kant would make them. We know, at least, that they are adaptable to knowledge; and I cannot see how the fact that this conviction rests on the experience of success, renders it invalid. Indeed, even if things-in-themselves should somehow refuse to admit of the synthesis of knowledge, we should know at least that much about them. To recognize the general truth here involved is, indeed, to find oneself in possession of a pretty intimate acquaintance with things-in-themselves. They admit of spatial and temporal construction, they admit of causal arrangement and necessary connection, they infinitely surpass any finite comprehension of them in a completed system. The absolute separation of knowledge from its object can have, therefore, no metaphysical significance.

That is the lesson we have learned from the futility of such a separation. We can in no sense define reality in a way which makes it unrelated to knowledge, but this does not make a definition of reality impossible. It shows us rather that the conception of reality thus unrelated is quite meaningless. Knowledge is thus disclosed to be a real relation between things, a form of connection which has ontological significance in the general determination of reality's definition. Whatever may be the nature of reality, it is, in a measure at least, held together in a degree of continuity by the knowing process, and to that extent definitively characterized. And it must be further recognized, that, because reality is so characterized, it admits of numberless

changes and transformations. For knowledge breaks forth into action, and reality becomes modified as the result. Reality thus not only allows knowledge to synthesize it, but it allows those transformations within it which such knowledge makes possible. And so the breaking down of the barrier between knowledge and reality, which had been set there because knowledge was found to be non-representative, reveals anew the possibilities of metaphysics.

These, then, are some of the lessons that we have learned from the historical method of handling the problem of metaphysics: the weaknesses in the evolutionary conception and in traditional terminology, the futility of the distinction between appearance and reality, the necessity of an independent metaphysics, the need of a logic of definition, the non-explanatory character of much of metaphysical knowledge, with a recognition of the value of such knowledge, the metaphysical failure of the distinction between epistemology and metaphysics. We have doubtless learned others of importance, but these have appeared to me to be among the most important. The recognition of them ought to serve us in determining in a positive way the general nature of the problem of metaphysics.

This problem is naturally the nature or character of reality. What is reality? How is it to be defined? is the metaphysical question. But such a question has its own meaning apart from any answer which may be given to it. For a search for the concrete characterization of reality implies the abstract form which is to receive the concrete content. The problem of metaphysics involves, thus, first of all, its detailed formal statement. We have to ask in most general terms, What does the solution demand in principle, under the conditions which we may discover as determining it logically? Here we come at once upon one of the most significant positive results of our previous discussion. It is this: reality cannot be defined intelligibly as a system absolutely external to the one who formulates it, nor a system in which the one who formulates it is a mere incident, or of which he is a mere product. That is the positive contribution made by the weakness discovered in the traditional types of metaphysics, in the

breach between reality and appearance, in all thorough-going evolutionary conceptions, and especially the weakness in the distinction between epistemology and metaphysics. The moment the definition of reality makes of reality an explicitly or implicitly complete system over against the metaphysician, or makes of him a merely incidental occurrence in its otherwise independent operations, reality has been put beyond any intelligible grasp of it. Reality absolutely external to the metaphysician will give him nothing besides himself. And reality, become momentarily conscious in the metaphysician, will give him no more than his moment of consciousness. Here, as I have said, we are back once more at our point of departure, with the metaphysical curiosity still unsatisfied. The failure results from the destruction of the only point of view from which anything can be defined, namely, the point of view which allows an independent position over against the matter to which it is directed. Destroy such independent positions, and the possibility of definition is destroyed. This fact is, of course, practically recognized. From some point of view, as independent, we define an object which from that point can be viewed and defined. But we should give to this epistemological principle its metaphysical significance, and recognize that the definition of reality involves numberless points of departure from which reality may be grasped, and that each of these points, in its relation to what is thereby defined, is an absolute and undivided individual.

Thus we may claim that the problem of metaphysics is fundamentally the problem of individuality, the definition of reality is primarily the definition of the individual. But individuality cannot be defined away or argued out of existence. Its definition must give to it the fullest ontological recognition. No metaphysics must be allowed to vitiate the basal proposition about reality, namely, that it consists of that which can be defined and grasped solely from points of departure absolutely individual in character. If reality is a system, it is a system of individuals. If it is not a system, individuality is one of its essential characters. Whatever it is, individuals enter somehow into its constitution. If one should claim that thought immediately demands that we

should transcend individuality, we can answer that the attempt to transcend it is to reinstate it. Thus it is that individuality cannot be defined or argued out of existence. It is there to stay.

The definition of individuality is thus the first problem of metaphysics. From the nature of the case, this definition must be non-explanatory in the sense indicated in our previous discussion. If individuals are ultimate, we can never hope to show how they originate or what the laws of their occurrence are. We can define them, so to speak, only denotatively. We can exhibit in many ways their presence. We can show how they are repeatedly involved. We can employ other terms and conceptions to make them more palpable. Here such categories as *activity*, *change*, and *the transient* may be found to be of use. They exhibit that to which the term individuality is applied in its concrete bearings. The whole of the logical doctrine of universals and predication may serve in the desired determination. But our concern here is one of method and not of content. We may therefore leave the general consideration of the problem with these suggestions, since the definition of individuality has been pointed out as the primary problem of metaphysics, and the methodical character of this definition has been noted.

It is to be observed, however, that the attempt to carry over the idea of individuality into the realm of concrete determination, and, indeed, the attempt to construe what we mean when we say that reality has somehow individuals as its primary ingredients, involve new questions in the general determination of the problem of metaphysics. For we wish to know more of these individuals, their number, their kind, their order, and in this attempt we find ourselves involved in new problems. Then, too, that indefinite term *somehow*, which has been used to indicate the way in which individuals enter into the constitution of reality, demands determination. As these things are reflected on, the second basal problem of metaphysics arises, that of continuity. Individuality and continuity are bound together in all our thinking. Indeed, the assertion that thought demands that individuality be transcended, is really the demand for continuity as a supplementary conception. Again, we should give to these epistemological prin-

ciples their metaphysical significance. If we are bound to recognize that individuality enters into the constitution of reality, we are equally bound to recognize that continuity enters also. But before concrete significance is attached to this fact, we should concern ourselves with the problem of method.

It is to be noted that, while individuality and continuity are supplementary and correlative, they are radically opposite in nature. Continuity is not itself individual, but is the denial of individuality in the realm where it applies. We may dismiss at once, therefore, all attempts to derive individuals from a continuum, or to construct a continuum out of any number of individuals. The two facts may go together, may even imply each other, yet the one may not, therefore, be deduced from the other. This is, in fact, but another way of asserting that the concept of continuity, like that of individuality, is non-explanatory in character. It may be admitted that the character of the continuity may be determined by reference to the character of the individuals, as I shall attempt to show later, but the fact of its presence in reality may not be so explained or determined. The logical universal may serve here as a passing illustration. Any number of individuals may exist in a general class. The fact of class cannot be deduced from that of individuality, nor the latter fact from the former. But the character of the class may be determined by the character of the individuals. So it may turn out that the continuity of reality gets its character from the individuals, or from one individual, as Aristotle maintained; but such a result would not militate against the recognition of the distinctness of the two conceptions. As I return to the consideration of this question later, I submit at present no farther discussion of it.

Individuality and continuity are supplementary, but essentially different in nature. It is quite possible, therefore, that the continuity may also have a character essentially different from that of individuals. One such character, at least, is readily recognized, that of infinite divisibility. This cannot be ascribed to individuals, but it appears to be of the very nature of a continuum. But as individuals cannot be deduced from a continuum, they cannot be

arrived at by a process of infinite division. Again, the points determined in any way we please by intersecting directions in a continuum are not true individuals. But such points may involve individuality in their determination. A continuum cannot determine itself or make its own directions intersect. Such a determination must come ultimately from outside the continuum, from an exterior point of departure. And when once this determination has originated, the continuum will present necessary relations between the points defined and all that beauty of a causal nexus which is so much admired. The impossibility of deducing necessary connection from individuals was the classic contribution of Hume to metaphysics, and it can hardly be claimed that Kant successfully supplanted it. But it may be recognized that necessary connection is the nature of a continuum determined in any direction. Such a consideration suggests quite different metaphysical conclusions to be drawn from the famous antinomies. Instead of indicating an inevitable dialectic of reason with itself, they point to a radical diversity in the constitution of reality.

Any attempt to grasp individuals in a continuity involves permanent acquisitions or relations for knowledge, at least. Of course, it is abstractly conceivable that individuals, even in a continuity, should be of such a character that every attempt to relate them would be futile. Yet this is not true as a matter of experience. Whatever the nature of our individuals and their continuity may be, the fact of their supplementation does involve successive changes which result in permanent acquisitions. The processes of reality are conservative. Individuals exist in continuity in such a way that the result is cumulative. Each individual, if it alters in any way, alters thereby the continuum in such a way that the alteration is not wholly lost. The continuum takes it up and preserves it. We can express this fact in no other way than by saying that the existence of individuals in continuity gives to such an existence the character of purpose. Thus the problem of purpose appears to be another fundamental problem of metaphysics.

It is by no means necessary to the conception of purpose that

it be defined as something superimposed upon the individuals or existing prior to them, either temporally or logically. All that we need to embody in our definition is the recognition that the alterations in individuals are cumulative in effect. Such a recognition provides for the constant approach of this accumulation toward definite issues through the elimination of useless factors. Thus far the definition of purpose involves no explanatory elements. It is rather descriptive and definitive of the nature of reality. But we may inquire after the character of this purpose. This inquiry may reveal an explanation of the character of purpose through its reference to the character of the individuals or of their continuum. Here we return to the general problem of which farther discussion was promised. Our attempt to define reality may show that there must enter into this definition three basal facts, individuality, continuity, and purpose. We may recognize that the nature of reality is such that these facts do not admit of deduction from each other or from any original, and consequently that they are non-explanatory in character. But we cannot hold these facts in such isolation that there will result between them no unity of any sort. This desired unity, no matter what may be its origination, will be, in one aspect at least, a unity of character, that is, the three facts will present the same aspect in certain directions. We may ask, then, Whence does this unity of character arise?

It has been suggested already that the continuum may get its character from the individuals or from one individual. An illustration of this may be seen in the character of a people's history arising from its individuals and great men. But the converse of the general proposition does not appear to be true, namely, that the individuals get their character from the continuum. For such a supposition reduces continuity to individuality. It not only distinguishes continuity from individuality, but isolates it, and we should require a further continuum to bring our individuals and the first continuity thus isolated together. We should find ourselves here on the well-traveled road to no conclusion. We must recognize, therefore, that the continuity gets its character from the individuals. This is, indeed, but another way of saying

that the continuity is progressive, cumulative, purposeful. And so our further question is answered, and we recognize that ultimately purpose gets its character from the individuals.

We are thus in a position to ask whether the character of continuity and purpose alike is to be derived from all the individuals, or from a restricted number? The answer to this question carries us into the material side of metaphysics, which it was the purpose of this address to avoid as far as possible. But the following suggestions are offered. We may recognize at once that all individuals must enter into the determination of the character as a whole. The question can refer only to the dominating characteristics. If these are to be ascribed to a single individual, this individual must be regarded as holding a unique and dominating position. Again, if knowledge, as indicated above, is a real connection between the elements of reality, and if we are entitled, therefore, to regard knowledge as in any sense the dominating character of the continuum, we may conclude that the individuals who can know are the essentially determining factors. Such a conclusion would involve a recognition that a unique individual, if insisted on, would very likely have a character akin to these factors. Even if the argument should not be pursued in this particular way, its general line of procedure has been indicated.

Purpose involves, as we have seen, that the alterations which may take place in the world of individuals are accumulated and conserved. We may admit that the bare conception of individuality does not oblige us to think of individuals altering in any way. But however *a priori* our conceptions may appear on analysis, they are never given apart from certain determinations of experience. We are obliged, therefore, when we view individuals in their existence, to recognize that they alter. Indeed, as noted above, *alteration*, *change*, *movement*, are concepts well calculated to assist in a fuller determination of the definition of individuality. Since individuals do alter, we find another problem of prime importance for metaphysics, namely the problem of potentiality. This problem is bound up not only with the fact of individuality, but with that of purpose also. For the fact of accumulation and the narrowing of this accumulation down to definite

results to the exclusion of others, forbids our entertaining the supposition that the future is wholly without determination. We may admit that a given event may never occur, but if it should occur, we are forced to recognize that it will occur within certain restrictions which it calls into being. The acorn may never become an oak, but should it become one, there exist already in some shape the conditions which are to determine that result. This fact is the fact of potentiality. In all the determinations of our knowledge, few concepts are of greater value. We constantly ascribe to the elements with which we deal certain potentialities which allow us to formulate the possible results. Instead of recognizing this practice as an epistemological infirmity, we should recognize its ontological significance, and conclude that the potential is itself an element in reality's constitution. We should have thus a fourth factor in our general definition of the metaphysical problem.

The fact that it seems impossible to formulate the potential with any exactness before it loses its character, leads us easily to reject its validity. But it was pointed out as long ago as Aristotle, that this rejection drives us to the alternative of affirming the whole realm of being to be in a state of changeless actuality. Violence is thus done to the facts of life. Alteration is driven out of the realm of the real. Such a result cannot dominate us long. Change and motion still persist, no matter with what amount of unreality we may designate them. We must give some status to the bare potential, even if the task appears most difficult. We may recognize at once that the bare potential contains within itself no elements which can lead to its own realization. To be more than a mere possibility, something else must supervene. The whole of existence at any moment faces the future, therefore, with untold possibilities. Each of them, if started on the road toward realization, has its path determined, but from the point of view of potentiality, all are equally possible. The determined path presents us with all the elements of a necessary connection, but we look in vain for such connection when we seek among the untold possibilities the one which is in effect to be. Something new must add itself, must emerge, as it

were, out of non-existence into being. An arbitrary point of departure must arise, and when once it has arisen, the movement proceeds with definiteness. It is thus, whether we like it or not, that the doctrine of chance originates. To adopt again the argument of Aristotle, the elimination of chance is the elimination of the potential. For if there had always existed the elements necessary to transform the potential, it would have always been transformed, and so motion and alteration could have no place in the scheme of things. Chance along with the potential would thus appear to be essential elements in the definition of reality.

It is very easy to misconstrue the doctrine of chance. Too readily we conclude that it destroys the possibility of exact knowledge in all spheres of inquiry. We fail to observe that all our knowledge up to the most exact rests on presuppositions which give to it all the validity it can claim. If conclusions are always drawn from premises, if every consequent must first have its antecedent, we may well conclude that this necessity in knowledge has its significance for reality as well. Indeed, if we knew all the conditions that are necessary to any result, we should know that result. But the moment we inquire after these conditions we are led to others, until the admission is forced from us that our knowledge will never free itself from ultimate contingency. Only a lack of broad reflection on the problems of existence can lead us to ascribe this result to the imperfection of our knowledge. It is far more rational to ascribe it to the nature of reality itself, and to recognize that the elements which enter into the constitution of reality force us to admit that any result can be determined only when a point of departure is first determined, and that this determination, if original, as it must be to preserve potentiality, is something new and underived in the scheme of things. And here we are back again at the recognition of individuality from which our discussion started.

The considerations here briefly outlined have aimed at stating the problem of metaphysics in terms of its most essential elements, and in independence of its concrete content. In their light, an inquiry concerning the nature of reality appears to be

an inquiry whose results are to be expressed in terms such as individuality, continuity, purpose, potentiality, and chance. The complete definition of these concepts would be a very close approach to the complete definition of reality. Their recognition would enable us, I think, to approach the solution of the problem of metaphysics with an independence and directness highly to be desired. I have confined the discussion closely to the formal side of metaphysics, avoiding as far as possible its material content. The advantages of such a procedure are evident. Before the solution of the problem can be effected, it is necessary to have its statement, to formulate its equation, as it were. We must know beforehand the conditions which our solution is to fulfil, in order to determine its correctness when attained. This general consideration applies to metaphysics with as much cogency as to any other branch of inquiry. The indication of these things was the purpose of this address.

Although this purpose has, as I hope, been in a measure attained, I should like in conclusion to emphasize in a summary form the more important points of the discussion. The concepts, in terms of which the problem of metaphysics has been stated, have been regarded as ultimate and underived. In logical terms, they have no common genus in terms of which they can be defined, and they cannot be deduced from each other or from a common conception. To adapt an idea of the Scholastics, they are to be regarded rather as ultimate differentia than as species under a common genus. The definition of them can be accomplished, therefore, only by exhibiting them in their concrete form and analyzing their concrete content. It is the status of their existence and the concrete modes of their operation which have to be determined. Yet even if they are ultimate and incapable of deduction, they exist together and supplement each other. They do this as a matter of fact, and not as a matter of deduction, or under conditions which themselves need analysis and explanation. In other words, the moment we attempt to grasp reality, we find ourselves compelled to grasp it in these terms, in full recognition of their absoluteness and their supplementation. We are compelled to recognize that reality is

not a term which covers something which has no irreducible internal differences, but a term which covers ultimate differences in supplementation. Finally, let it not be urged as an objection that this is to elevate as the test of reality's ultimate constitution, the imperfections of knowledge, the poor, weak fact that every proposition, to convey a meaning, must have a subject and a predicate which are different. For when we say that there are certain conditions which must be fulfilled in order that knowledge may be knowledge, we must recognize that it is the constitution of reality which determines these conditions. We may ascribe what *a priori* powers we like to knowledge; but these powers would never receive an atom of significance in experience, if reality did not call them out and fit into them. We must most certainly give up the ways in which alone it is possible for us to know, if those ways will not work, and most assuredly it can be nothing but reality which is to determine which of our possible ways is to succeed. If, therefore, reality baffles us until we recognize that we must seek to grasp it in some such terms as indicated in our discussion, we may recognize in these terms the elements of the problem of metaphysics and the ultimate determinations of the constitution of reality.

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PROBLEMS OF SCIENCE AND PHILOSOPHY.

THE title which I have chosen for this essay is partly a subterfuge for a classification of the sciences, and partly an excuse for the discussion of some related questions. Had I chosen this alternative title, I should have started preconceptions which I wish partly to avoid, at least for the present, though I wish some connection to be recognized between what has been regarded as classification of the sciences, and various problems of human reflection which may extend beyond some of the meanings attached to the term 'science.' The course here taken, which is practically an adoption of both titles, will help to prevent misunderstanding at the outset. Usually the relations of the sciences have been expressed in terms of territory, and not of problems. It is possible to make both ideas more or less convertible, as territory also delimits certain problems. But, in spite of this fact, the coincidence does not define them. Though problems may vary with a variation of territory, they are not clearly defined by this circumstance. Hence it may be well to study the relations of the sciences in terms of their distinct problems, rather than in their real or apparent differences of field.

I half suspect that the primary motive in many, if not all, classifications of the sciences, has been the love of systematization, a desire for some unified conception of the forms of human knowledge. No doubt the attempt is often prompted by the discovery that certain sciences are in some way related to each other. For example, logic and psychology have both to do with mental phenomena, though one of them does not exhaust the field, and the other does not occupy itself with the same problems as the first. Sociology is in some way closely connected with history, economics, and politics. Mechanics is often treated as a department of physics. Similar illustrations might be chosen indefinitely, but they would only indicate what may be obvious to every one, namely, the fluctuating relations which subsist in various minds between the sciences suggesting a systematic method of classifying them. For this the illustrations given suffice.

If I were bent on the task of rejecting certain systems of classification and accepting others, it might be profitable to undertake a review of some of them; but, as it is possible to assign at least a relative value to all consistent classifications, I do not find it necessary to pursue an invidious task, or at least to study the work of the past with a view to repudiating it. But I shall call attention to two systems of classification, partly for the purpose of initiating this discussion of their problems, and partly for showing a relative justification of both. They are the classifications of Comte and Spencer.

Comte's system I shall call the *serial* method of classifying the sciences, because it was not his purpose to represent them in the relation of genus and species. It was rather a relation of dependence of certain sciences upon others for at least a part of their method and results. He did not attempt any complete and exhaustive consideration of the special fields of human inquiry, as his object did not require this. He confined himself to the more general sciences and their relations to the problems which mainly occupied his mind as a student of politics or sociology. After recognizing the two fields of phenomena, organic and inorganic, he adopts the following as the order of relation between the general sciences: Mathematics, astronomy, physics, chemistry, physiology, and social physics (sociology). He makes also the distinction between the abstract and the concrete sciences which Spencer afterward adopts, but he does not make the use of it which the latter finds appropriate. It is interesting, however, to note that Comte makes no mention, for obvious reasons, of philosophy, metaphysics, or psychology. His intention was to recognize nothing but what he regarded as legitimate fields of investigation and to be himself the sole judge of what man should study. But in thus excluding certain problems with which men have actually occupied themselves, and in not specifying problems within the limits of the sciences which he does recognize, he has given a very meager conception of the real interests of the human mind, though the serial method of viewing the relation of the sciences is capable of very fruitful application.

Spencer adopts what I shall call the *logical* method of classi-

fication. It is a division of the sciences into genus and species, and applies the principle of territory, in the main at least, as the ground of distinction between them. His classification is carried out with considerable clearness and detail. I think it is far more exhaustive of the fields of human inquiry than most attempts of the kind, and has high merit. Accepting the fundamental principle of division, I would have no specially serious criticisms to make upon it, as I recognize that any classification may be correct, as judged by the purpose for which it is made and the conceptions of terms as assumed. These are always elastic enough to demand some tolerance for variations. But if I were to criticize Mr. Spencer's classification, it would be for its fundamental principle of division. This is his distinction into abstract, concrete, and abstract-concrete sciences. I have no special objections to raise against the way in which the special sciences are distinguished from each other after this principle has been adopted, though minor differences of opinion would suggest themselves; but I do not think that his fundamental principle expresses the real nature of the distinction between the sciences. This, I think, is apparent from the place occupied by logic and mathematics. Their classification as coördinate species ought to imply a closer relation in subject matter than actually exists. It is like classifying trees under the principle 'tall' or 'short.' Besides, we could as well put ethics under the head 'abstract' as logic and mathematics. I think it will be found that ethics is quite as formal a science as logic, and may be considered quite as abstract. It does not seem right, again, to make sociology a subordinate division of psychology. What Spencer has seen here is the fact which Comte's serial classification observed, namely, that sociology depends on certain psychological functions and phenomena for its meaning; but he did not observe that, as actually studied, it deals with a wholly different set of phenomena. If the meaning of sociology were determined, as it ought to be, by the principle of division, there would be no objection to the place assigned it by Spencer, but the term would not have the import which students give it, and which Mr. Spencer's own discussion of it in his Synthetic Philosophy as-

sumed. Mr. Spencer's difficulty, and hence liability to objections, arose out of his attempt to give a classification which would satisfy two incompatible conditions at the same time, namely, an ideal and the actual conception of the sciences. He was trying to impress the actual conception of the sciences into a frame which gave them an ideal meaning different from that which custom and usage had assigned to them. Consequently, he confused territorial and problematic considerations in his system.

Now what I wish here to undertake is a combination of the objects indicated by the systems of Comte and Spencer, namely, a logical and a serial classification of the sciences or problems of human thought and action that will recognize both territorial and relational facts at the same time. It will combine the logical and serial methods in a way to show both the intimate connections and the distinctions between the various sciences, and will be as exhaustive as the case requires. The important premisory remark, however, to be made at the outset, as a precaution against misunderstanding, is that the classification is based, not on any definite conception of the various sciences, or terms naming them, as generally understood, but on what the conceptions must or ought to be as determined by the principle of division adopted. I shall not attempt to classify the sciences as their territory *is* defined, but as it *ought* to be in an ideal system. At the same time, I shall have no quarrel with the accepted meaning of terms as they have been historically developed. I merely find that it is impossible to discuss a theoretical and a practical problem on the assumption that actual and ideal usage shall coincide.

I think we may reduce the fields of human interest to three, in the widest acceptation of the terms. I shall call them the world of *events*, the world of *worths*, and the world of *causes*. This is a slight modification of the division by Lotze, which was the world of *facts*, the world of *laws*, and the world of *worths*. I discard the term 'facts' because I wish to assume that all three worlds are 'facts.' In the first of these fields or problems, we wish merely to ascertain what the events are which we have to observe and systematize. I shall describe this field as the *Phenomenological* problem. Ultimate explanation may be excluded

from this problem. I shall subdivide this phenomenological field into two classes of subordinate problems, which I shall call the *Ergological* and the *Nomological*. I have coined the word 'Ergological' for the purpose of distinguishing the question of the *laws* of events from the mere fact of their occurrence and unsystematic apprehension. I might have adopted some other term, such as 'pragmatological'; but on the whole, owing to the use of the Greek term τὰ ἔργα for 'facts,' I decided for the former. It is intended to express the nature of the first problem of human interest, namely, the bare knowledge of the events which suggest other problems after they are accepted. The nomological problem represents the demand for the *laws* of events, the systematic order of their occurrence, the determination of the coexistences and sequences of phenomena. Superficially, phenomena may seem to occur without order, and that order has to be an object of quest whenever it is not apparent. Ergological and nomological problems, therefore, represent two distinct fields and methods of inquiry, which I shall further consider in the serial representation of the sciences that fall under them.

I shall also describe the world of *worths* as representing what I shall call the *Ideological* problem. By this I mean, in general, the field of *ideals*. The origin of the term and this conception of it are apparent without further comment. But I shall subdivide it into two distinct classes of problems, which I shall call the *Orthological* and the *Teleological*. By the orthological problems I mean the question of *norms* or criteria of values in every field of human interest. By the teleological problems I mean the question of *means* to ends which may be either ideally or actually adopted for action. In general, they represent the field of the arts as distinct from the sciences. The problems and sciences serially related to these will appear in the tabular representation.

The world of *causes* I shall describe as *Ætiological*. I use the term to comprehend both *material* and *efficient* causes, and subdivide its problems into two classes according to this distinction, and so have what I shall call the *Ontological* and the *Noumenological* problems. The special meaning of this latter term and the reason for the use of it are found in the fact that we need

some expression for the mind's habit of seeking something that *transcends* the phenomenon to be explained, something that is not given *in* it though implied by it, and that may be of a different kind from that whose explanation or ground of occurrence is to be determined. The term is borrowed from the usage of Kant, as is apparent, but has not exactly the same import and implications.

It is not necessary in this last class of problems to assume that the field is a legitimate one. So far as the general question is concerned, we may admit with Comte that metaphysics is not a legitimate inquiry. But it is a fact that men have indulged in inquiries or speculations which they have chosen to denominate as the world of causes, or facts and realities other than mere phenomena. All that I am required to do is to recognize it as an actual human interest, and not to decide whether it is legitimate or illegitimate. I am merely concerned to know and recognize that men have been curious to ascertain the existence of certain realities which they supposed to have been supported by the evidence of phenomena. With this proviso, I now give below the tabular classification to be discussed afterward.

CLASSIFICATION OF THE SCIENCES, OR PROBLEMS OF SCIENCE AND PHILOSOPHY.

Phenomenological.		Ideological.		Ætiological.
Ergological.	Nomological.	Orthological.	Teleological.	Noumenological Ontological.
A	Mathematics	.....	... .	Metrology
B	Physics	.....	Engineering	Hylology
C	Chemistry	....	Pharmacy	--------
D	Physiology	Hygiene	Therapeutics	.....
E Anthropology	Psychology	Epistemology	Pedagogy	Pneumatology
F	.....	Æsthetics	Art	.....
G	Ethology	Deontology	Prattology	.....
H Relig. Annals	Sci. Relig.	.....	.....	Theology
I Pol. Annals	Sociology	Jurisprudence	Politics	.....
J	K	L	M	N

Before entering into an exposition of this classification, I must premise a statement as a precaution against any misunderstanding. It is that no term in this table can have any other meaning than that which its position in the table and the principle of division

predetermine for it. The classification, I repeat, is not an attempt to assign the actual meanings of the terms in all cases, but the meaning which they must or ought to have in such a system. This meaning may or may not conform to accepted usage in its breadth and depth. All the concession that I have endeavored to make to conceptions in existence is found in the place assigned to a name. In this I have in most cases taken that meaning which is nearest the meaning that the term obtains by the principle of division, and have left to the reader to limit or extend that meaning to suit the particular situation. Were it not for this proviso, which conditions the use of the terms, I should have to face the objection that many of the sciences involved are not conceived in their acceptable or accepted import, for instance, anthropology, jurisprudence, and politics. But with the explanation given, the reader will understand that I intend to admit that actual usage does not always coincide with the ideal conception of the distinct problems which I am here trying to define. I can but approximate this ideal in my terms. Objections I shall consider later, some of which arise from the omission of sciences which the reader might think ought to be included.

As I have already remarked above, the classification is partly territorial and partly problematic. The divisions represented by phenomenological, ideological, and ætiological involve both territorial and problematic distinctions, and are *logical* in their treatment of the matter. That is, both the field and the questions involved are distinguished. It is the same with the subdivisions of each of these general classes. But the horizontal lines of classification represented by the letters from A to I indicate identity of territory, but a distinction of problems. That is, the sciences involved deal with the same phenomena, but with a different object in view. The vertical lines of classification indicated by the letters from J to N represent the *serial* classification, and involve a distinction both of territory and problems, but a *connection* of the two. The dotted lines indicate that there is no accepted term for the field or problem corresponding to it. The hyphenated line under hylology indicates that this term may be and should be used to cover the field occupied by chemistry, etc. I have

omitted phytology or botany, between chemistry and physiology, as representing the vegetable world, because there are not representatives of it in any of the other parallel positions, unless under the teleological head we accepted horticulture. If desired, this can be supplied by the reader.

I have omitted certain sciences from the table, because they may be considered as subdivisions of the general sciences mentioned. For instance, it will be remarked that I have not included astronomy in the list. The reason for this is that we may treat it either as a combination of mathematics and physics, or as a division of physics in the general sense, which it really is. We may then treat such subjects as mechanics, hydrostatics, optics, acoustics, etc., as departments of physics. Similarly, we may subdivide sociology into history, economics, and politics in the usually accepted sense of that science. What I have presented here is the most general conceptions of the sciences in a way to show their interrelations with each other, and at the same time such a distinction of problems as will aid in their more exact definition when necessary.

One other fact I wish to notice. I have tabulated them in the order which represents the chronological succession of problems. First, we have the simple and unsystematized facts to catalogue. In this, we do not primarily take account of anything but the fact of occurrence. This is the ergological problem. After ascertaining our facts or phenomena, we proceed to ascertain the law which governs them. Here we begin the problem of systematization. Unity and order of a certain kind are determined by this question. It is the nomological problem. We may disregard the metaphysical question of causes altogether, and be content with mere coexistence and sequence, as practical life may not be concerned with any other result. But when we come to the orthological problem, we begin a process of selection among our phenomena. In the nomological problem, we must treat all facts or phenomena alike. We make no distinctions of a moral or æsthetic kind. Good and bad, right and wrong, normal and abnormal are explained in the same way without reference to any ideal considerations.

But in the orthological question, we have to deal with criteria of values. Validity is the fundamental issue, that is, the choice of facts and phenomena to be estimated above or below others in practical conduct and adjustment. Then, finally, there is the determination of the *means* to these ideals after the selection is made, and this is the teleological problem as explained above.

The positivist or phenomenalist would stop at this point, and admit no other subjects of investigation into his system. For certain purposes it may not be necessary to go further, or to inquire about anything else. But the human mind has insisted on speculating on other real or imaginary problems, and I have chosen to denominate these the ætiological, by which I may also express the metaphysical questions. These are metrology, hylology, pneumatology, and theology. They represent problems of the existence and nature of realities or facts other than mere phenomena, or phenomena as known to sensory experience. By metrology I mean the metaphysics of space and time as the principles of continuity and individuation, and so determinative of the basis of all applications of mathematics. Hylology represents the question of the existence and nature of matter, and so includes all speculations such as the atomic theory and various attempts to determine the ultimate nature of this reality. Pneumatology is the problem of the existence and nature of the soul, of a reality other than the brain to account for the phenomena of consciousness. Theology seeks to determine the existence and nature of God, or an Absolute, assumed to underlie and control the whole universe of reality. These sciences or speculative inquiries are given in the order of their dependence. Space and time are the first given data of knowledge in this class. We may take them as the most certain, and as representing the properly static universe, as they involve no change, no phenomenal aspects. In the next, hylology is a reflex of certain phenomena which are supposed to have a center of reference, a substantive background, which we agree to call matter. These phenomena are comprehended in certain changes or activities, which require us to suppose some other reality than space and time as their ground. If all phenomena or changes can be referred to matter

as their substantive ground, there will be no reason for supposing a soul. Pneumatology will have no place in metaphysics, if we have no evidence of consciousness apart from material organisms. It is conditioned upon the existence of facts that require us to suppose something besides matter to account for them. But as long as consciousness is associated with a physiological organism, pneumatology will sustain the same relation to hylology that psychology sustains to physiology. It will be dependent upon it for at least a partial explanation of its phenomena. The relation between theology and pneumatology will be analogous. The existence and nature of any other intelligence than man in the universe will depend, first, on the discovery of phenomena for which matter cannot supply an explanation, and secondly, upon the discovery of a mental reality other than the brain to account for consciousness and as an indication that matter is not the only reality in existence. Whether any such result can be achieved, it is not my purpose to assume or assert. I am only defining the problem as it has been conceived, or ought to have been conceived. It places theology as the last science in both its nature and its certitude, the last problem which man has to solve, if it be legitimate and soluble at all.

This classification is intended as an aid in the definition and delimitation of the various sciences which it has often been difficult to distinguish clearly. The objections which will suggest themselves are founded on the differences of conception which various men have of the particular sciences. For instance, it may be fairly objected that jurisprudence is not an orthological science, a science of what is ideally right in social and legal relations between men, but a science of positive law. It is true that the definition of this science has varied from the time of antiquity to the present, and has been affected by the exigencies of thought in each age. Ulpian regarded it as the science of the just and unjust. Later writers like Holland regard it as the science of positive law, but are careful to say that it is not "applied to actual systems of law, or to current systems of law, or to suggestions for its amendment," but is "abstracted from positive law." I need not question that there is such a problem,

or that jurisprudence may be a proper name for it, but, as indicated above, I think that this very conception of it comes near enough to that which is determined by the orthological problem to place the term in that column, at least provisionally. It is the same with the term politics. That term, as used to denote a science, might very well be chosen to represent the place occupied by jurisprudence in some respects; but it has also come to have a practical meaning, and it is this which I give to it in this connection, to indicate that there is a practical problem in social matters after the ideal has been determined. Objections to other terms would be of the same kind, and would be answered in the same way. Considering, then, that I mean only to apply my terminology provisionally for the purpose of defining the various problems of knowledge, and as predetermined by the principles of classification, I may well refrain from criticising the prevailing conceptions of the sciences, as various human interests have determined them. In actual usage and investigation, the conception of a science is largely determined by the mental interest of the inquirer. For example, if he is not interested in metaphysics and theology, he is likely to insist that psychology is an 'empirical' science, and whether it actually becomes so or not will depend wholly upon the extent to which investigators into mental phenomena actually adopt that limitation of their inquiries. If he is interested in other matters than the mere determination of mental phenomena and their laws, he will introduce other problems into psychology and define his science accordingly. It will be the same with every other science. Nomological, orthological, teleological, and ætiological interests inevitably become intermingled in the treatment of phenomena, because human interests are stronger than the restraints of abstract and logical definition. They have their uses also. Hence I shall not quarrel with the various actual conceptions which serve an important function in the synthesis of phenomena, if only I may show the distinctions and connections of the various inquiries so embodied, and I think the classification which I have given helps to accomplish this object.

Two or three things more should be noted. It will be re-

marked that logic has found no specifically mentioned place in the system. The reason for this is that it may be treated as a department of epistemology. I conceive epistemology as the science of the validity of knowedge, or of the processes and criteria of knowledge, including perceptual, conceptual, judicial, and ratiocinative functions. Logic is the name for this last process, and may include the two previous functions, but not the first. Ethics finds a place in the system only by being divided into three separate sciences. These are ethology, or the mere systematising of human customs ; deontology, or the science of the ideal or duty, the ultimate end of conduct, and hence theoretical ethics ; and prattology, or the science of the conduct or actions which are necessary to attain the ideal, and hence practical ethics.

It will be noticed also that under the noumenological and ontological heads there is but one vertical column of sciences, real or imaginary. The reason for this is that I should have been forced to coin terms for all instances except theology and pneumatology. The last term exists, but has no current use, and when used in the past had not the exact meaning which I attach to it here. Consequently, I have been content with single terms for the two sets of problems which are comprehended under the two subdivisions of ætiological science. Actual custom has embodied all discussion of these problems under the head of philosophy or metaphysics, as the case may be, and no effort has been made to distinguish one problem from another. Sometimes the discussion of them has been associated with speculations in psychology, epistemology, or even physics. But I mean here to insist that the inquiry regarding any realities or facts other than phenomena shall be kept distinct from the methods and objects of the phenomenological and ideological sciences. If we prefer, we may adopt the comprehensive term metaphysics for the treatment of all the questions involved in the separate disciplines under ætiological conceptions, and so assume that noumenological and ontological questions are simply aspects of it. These must be explained.

The term 'noumenon,' or 'noumenological,' is an unfortunate one. It suggests all the difficulties, obscurities and dubious

problems of Kant's *Ding-an-sich*. I do not mean here to import them into the problem which I wish to describe by it, though I wish to admit that Kant's distinction between phenomena and noumena, if rightly defined and qualified, has an important function for human reflection. I use the term here to denote the ground or subject of an event or phenomenon, as distinct from its 'nature' compared with other such realities in terms of properties expressing identities and differences in the case, and hence denominated the ontological aspect or problem. I mean that the distinction between the two shall be that of sufficient reason or efficient causality and the principle of identity and difference, or, if we like it, the principle of materiality or material cause. Consequently, by noumenon I shall mean any reality or fact whatsoever which transcends the event that may be the subject of investigation and explanation by a center of reference, commonly expressed in a term for substance or subject of attributes. Whenever we recognize an event, an activity, a change, a phenomenon, which we may conceive as a function of something, or, if you like, as an attribute, static or dynamic, of something, we adopt some term to indicate the existence of that center of reference which we make, in some sense of the word, other than the fact to be so referred. Thus, if we discover certain events in connection with the behavior of the nitrogen in the air different from the nitrogen obtained from organic compounds, we suspect the existence of a new substance, and investigation shows that this new substance exists. The term argon is adopted to express it. It is the same with absolutely every substantive concept. This is actually the process by which the term matter is obtained. We observe certain events and uniform activities, or attributes, static or dynamic, and refer them to a subject or substance which we choose to call matter. It is not the phenomenon itself, but the ground of it. Whether we have a right to suppose any such thing is not the question, but only whether we actually do it or not. I am simply indicating the facts which give rise to certain modes of thought and speculation, and endeavoring to show that it applies equally to all physical science as well as metaphysics. Hence noumenolog-

ical inquiries are directed to ascertaining whether there is anything beyond the event or phenomenon which we observe in experience; and a reality other than the event will be assumed on every occasion on which the evidence goes to show that existing realities will not explain the fact involved, as in the case of argon, etc. They are simply the permanent centers of reference or reality, subjects which have these events or activities as their modes of behavior, functions, attributes, properties, etc. The noumenological problem, therefore, is only the question of determining evidentially the question whether any such thing or things exist besides the event to be accounted for. We have in speculation various representatives of this process, namely, matter, ether, soul, God; and the recent doctrine of energy as a substance shows the tendency to think in this way. The first problem of speculation has been that of matter. No other reality can be admitted, according to the law of parsimony, unless there be facts or phenomena that cannot be traced to the causal or functional influence of this subject or substance. Such a thing as a soul, a center of reference for consciousness other than the organism, must be rejected unless there be evidence that organization cannot account for it. Hence the problem to determine whether there be a soul is a problem wholly apart from the question of the laws of mental action, which may be the same for a materialistic as for any other theory of consciousness. Then follows the theological or theistic problem quite analogous to the last. They all deal with the cause or ground of phenomena.

After the mind comes to the conclusion that there is something besides the mere event, it seeks to ascertain its 'nature' in comparison with other assumed realities. This is what I have called the ontological problem, using that term in one of its scholastic meanings to denote the material as distinguished from the efficient cause of things. If there be only one kind of reality, that is, if absolute monism be the accepted doctrine, the ontological and the noumenological questions coincide. The only criterion of the 'nature' of a thing is what it *does* in that case. No comparison between it and other things for determining the unity or diversity of reality can be instituted on that supposition.

But if once a doctrine of pluralism be admitted, the question of identities and differences arises, and the ontological problem is to find the resemblances and differences between the units of reference in phenomena. That is, the different qualitative realities will be reduced to the smallest possible number. For example, the various realities or substances in the physical universe are classified and reduced to the seventy or more elements, all compounds being explicable by the union of the elements in various ways. In this way, unification of kind in realities is obtained and some conception of an ontological order acquired. It is effected by the study of the phenomena that suggest similarity of origin or attribution, so that the idea of cosmic unity is secured. The noumenological problem may not take us beyond a chaos, but the ontological problem may discover a unified nature and order that simplifies the world for knowledge. The former applies the principle of efficient causation and the latter the principle of material causation, and both determine the definition of metaphysics in its full scope. Whether any such science or discipline be possible, I do not here undertake to prove. I describe only the way in which men actually think on all speculative questions. It may be that metaphysics has no practical value, so far as this scheme is concerned. We may concede that practical life requires nothing more than the uniformities of coexistence and sequence, and may not be involved in any problems of the 'nature' of things. I shall not attempt to decide that matter. All that I am interested in effecting is the proper separation of problems as actually conceived in the history of thought, and thus aiding to define them in a way to pacify the passions of controversy and to show how the order of solution proceeds from the simpler to the more profound.

JAMES H. HYSLOP.

THE THEORY OF INDUCTION.[1]

AN examination of the different theories of induction shows us that there are two questions at issue: (1), What is the nature of the process called induction? And (2), What is the validity of the process?

The first question is answered as follows: Induction is defined in a general way as a process of inferring from the particular to the universal. That is, whenever we derive a general statement from a particular statement or facts, we have induction. Most writers would be willing to accept this as a rough definition of the process. Some distinguish between scientific induction and unscientific induction, but look upon both forms as coming under the definition.[2] Others, however, reject the unscientific form, or simple enumeration, and accept only that phase of induction which derives from particular facts the law of their necessary connection. According to them, induction seeks to discover not the casual, but the causal connections.[3] Of these, some identify induction with scientific method in general, including under it the forming of hypotheses, deducing their consequences, and verifying them.[4]

The second question also receives various answers. According to some thinkers, only so-called perfect induction is certain; imperfect induction is merely probable.[5] Nearly all seem to agree, however, that induction is grounded on the principle of the uniformity of nature. This principle is interpreted differently by different thinkers, sometimes merely called by another name. Some speak of it as the principle of identity. What is once true will always be true; whatever is, will remain so: the world is identical with itself.[6] Some express the same idea by saying that

[1] Read before the joint meeting of the American Psychological Association and the Western Philosophical Association, Chicago, January 1, 1902.

[2] Bacon, Mill, Veitch, Lotze, Wundt.

[3] Sigwart, Ueberweg, Bosanquet, Hibben, Welton, Creighton; Shute, *Discourse on Truth;* Hamelin, *Sur l'induction.*

[4] Sigwart, Jevons, Hamelin.

[5] Apelt, Whately.

[6] Lotze, Kromann, Bosanquet.

the particular is the expression of the universal.[1] Some call the principle the principle of necessary connection: the given is necessary.[2] Some identify it with the law of causation: every event must have some cause.[3]

Moreover, this principle of uniformity is conceived by some as a postulate of our thinking,[4] by others as the product of experience.[5]

Let us now attempt to answer the first question: What is the nature of induction? Induction is a process of inference. We must be careful to distinguish between inference and association of ideas. The perception of fire may arouse in the child's consciousness the thought of a burn, simply because these two things have been experienced together before. A knock at the door may arouse in my consciousness the image of a man making certain movements. But in neither case is there necessarily inference. In order to infer, I must consciously relate one judgment with another. I must ground it on some other judgment, or draw it from some other judgment. I must say, *Because* this is so, that is so; or, this is so, *therefore* that is so. In the words of Ladd: "The thinking subject reaches genuine logical inference whenever two judgments are related in such manner that one is made the 'reason' or 'ground' of the other, with a consciousness of the relation thus established between them."[6] There are two kinds of reasoning, deduction and induction. Both are processes of inference, and therefore essen-

[1] Aristotle, Hegel.

[2] Sigwart, Ueberweg, Hibben, Welton, Creighton.—Venn, *Empirical and Inductive Logic*, defines it thus: "Perhaps indeed as near an approach as we can get to any definition is reached by saying that wherever any two or more attributes are repeatedly found to be connected together, closely or remotely, in time or in space, there we have a uniformity. And the general expression, the uniformity of nature, is intended to cover all such partial connections, and to imply that their existence may be detected or reasonably inferred throughout all phenomena whatever" (p. 93).

[3] Mill, Jevons, Veitch, Benno Erdmann.

[4] Sigwart Lotze, Kromann, Bosanquet, Hibben, Welton, Creighton. — Venn, *Empirical Logic:* "I am very decidedly of opinion that the difficulty does not admit of any *logical* solution. It must be assumed as a postulate, so far as logic is concerned, that the belief in the Uniformity of Nature exists, and the problem of accounting for it must be relegated to Psychology" (pp. 131 f.).

[5] Mill, Jevons, Benno Erdmann.

[6] *Psychology, Descriptive and Explanatory*, pp. 463 f.

tially the same, that is, both consciously relate judgments with other judgments. In both cases a certain judgment is accepted on the ground of another; this is so, we say, *because* that is so; or, this is so, *therefore* that is so. The difference between the processes consists in this: in induction we ground our judgment on particular instances, that is, pass from particulars to a universal proposition concerning them; while in deduction we ground our judgment on a universal proposition, that is, we start from a universal proposition and draw from it other propositions according to the principle of identity. "In induction, then, we conclude that all A is B, because we have observed that a1 and a2 (all essentially alike and capable of being grouped under A) are B. In deduction we know, or assume as known, that A is B, and conclude that a3 (which we have never met with before) is B."[1] When I infer that all swans are white, because the swans I have seen were white, I am reasoning inductively. In induction we leap from a particular case or cases to all; we infer that because a certain thing is true of a certain case or cases, it is true for all cases resembling the others.

And here it is well to remember several important points. (1) So far as the principle is concerned, it makes no difference whether the induction is true or false. It is just as much an inductive inference to conclude that all crows are black because some are, as to conclude that all men are mortal because some are. Hasty induction is induction, as much so as careful and scientific induction. The characteristic mark of induction consists in making the so-called 'inductive leap,' in jumping from one or more instances to a general conclusion.[2]

(2) Nor is it correct to limit induction to the discovery of causal relations. Wherever we infer a universal statement from a particular case or cases, leap from the particular to the universal, we have induction. We do not strive to know merely the causes of things; we are interested in other relations also, for instance, in the co-existence of certain qualities, whether they are

[1] Ladd, *Psychology*, p. 478.

[2] "An imperfect, hasty, or unwarranted induction is still an induction, only a bad one." Veitch, *Logic*, p. 461. See also Mill. *Logic*, p. 233, note.

causally related or not.[1] Our purpose is to discover regularity, uniformity everywhere. Of course, if we identify causality with uniformity, as some writers do, if we call all those relations causal in which there is uniformity of sequence or co-existence, then induction means to discover causality. But if we do not define causality that way, if we do not conceive all uniform sequences and co-existences as causally related, then we cannot define induction as the quest for causal relations; for, as was already said, we are interested in all kinds of regularity or orderliness. It is true that, wherever we find such regularity, we are tempted to read causality into it; but that is another story.

(3) And this leads us to another point. It is held by many writers that induction seeks to discover the inner, necessary relations existing between things. In a certain sense, this is true. The thinker is always eager to find out what qualities are connected necessarily, that is, he wants to feel not only that certain qualities go together, but that they must somehow go together. He is not satisfied with the statement that all swans are white, because he does not understand the inner relation existing beteen swan nature and whiteness, he does not see why swans should be white, he does not see any necessary relation here. He seeks to discover connections between things which will satisfy him. "Take, for instance, the simple effect of hot water cracking glass. This is usually learnt empirically. Most people have a confused idea that hot water has a natural and inevitable tendency to break glass, and that thin glass, being more fragile than other glass, will be more easily broken by hot water. Physical science, however, gives a very clear reason for the effect, by showing that it is only one case of the general tendency of heat to expand substances. The crack is caused by the successful effort of the heated glass to expand in spite of the colder glass with which it is connected."[2] That is, the scientist aims to bring his proposition under a proposition which is more general in its scope, one which expresses a more constant connection between objects than the other, and therefore impresses us as necessary. He seeks for a simple formula under which he can embrace a

[1] See Veitch, *Logic*, p. 461; Venn, *Logic*, p. 93; Sigwart, *Logik*.

[2] Jevons, *Lessons in Logic*, p. 257.

great many cases that seem to have nothing at all in common. "Suppose some one observes that (*a*) the addition of fuel, (*b*) the action of blowing, and (*c*) cold weather increase the flame of the fire. He may at first be satisfied with the assumption that every one of these three phenomena is a cause of the increase of the flame. But when he discovers a great number of phenomena which are followed by an increase of flame, he finds it hard to think of them all. But if he can find that every time the flame is increased, something was added to the fire which, according to analysis, contains oxygen, he will reduce the manifold experiences to the simple formula: All things which contain oxygen and are added to fire increase the flame. He will probably go farther and say: Oxygen is the cause of the increase of the flame." [1]

The truth is, the thinker aims to understand his facts, that is, to assimilate them to the known, to bring them into relation with what he already knows. You tell him that heat cracks the glass because heat is motion, expansive motion; he understands that because he has seen many examples of motion breaking things. "We did not reject the assertion that there are black swans," says Mill, "while we should refuse credence to any testimony which asserted that there were men wearing their heads underneath their shoulders. The first assertion was more credible than the latter. But why more credible? So long as neither phenomenon had actually been witnessed, what reason was there for finding the one harder to be believed than the other? Apparently because there is less constancy in the colors of animals than in the general structure of their anatomy. But how do we know this? Doubtless, from experience. Experience testifies that among the uniformities which it exhibits or seems to exhibit, some are more to be relied upon than others." [2] But it must not be forgotten here that it is induction to conclude from our observations that heat cracks glass, that blowing makes the fire burn, that chlorine bleaches, even if we do not understand the reasons or see the so-called necessary connections. "We learn empirically that a certain strong yellow color at sunset, or

[1] Uphues, *Grundlegung der Logik: Nach Shute's* Discourse on Truth *bearbeitet*, p. 182.

[2] Bk. III, ch. iv. See also ch. iii.

an unusual clearness in the air, portends rain ; that a quick pulse indicates fever ; that horned animals are always ruminants ; that quinine affects beneficially the nervous system and the health of the body generally ; that strychnine has a terrible effect of the opposite nature ; all these are known to be true by repeated observation, but we can give no other reason for their being true, that is, we cannot bring them into harmony with any other scientific facts ; nor could we at all have deduced them or anticipated them on the ground of previous knowledge." [1] Induction is induction, whether we can bring it into harmony with other scientific facts or not. It must further be remembered that deduction frequently enters into those cases in which we reach so-called necessary connections. I discover by induction that heat cracks glass. I refer this empirical law to a larger induction, that heat expands substances. I say heat must crack glass under certain circumstances, *because* heat expands substances. If heat expands substances, it must expand glass ; and if the colder parts of the glass connected with the heated parts do not expand fast enough, the glass will break. This is really deduction. I subsume the case under a general rule. I think I understand it better when I see that it is really an instance of a general occurrence with which I am very familiar.

4. This brings us to another point. Several thinkers define induction as forming hypotheses, drawing their consequences, and verifying them. This, it seems to me, is a false definition. If we define it in this way, then we apply the name induction to different operations, we include under it both induction and deduction. If induction is both induction and deduction, then what is the process called induction, which with deduction constitutes induction ? Of course, we may, if we choose, apply the term induction to scientific methods in general, to the method which everybody uses in the pursuit of truth, and which embraces all the operations of the mind that lead to truth. But in that case what is the process called induction proper ? And why should we use one term for two processes, first for a combination of induction and deduction, then for induction itself ? The

[1] Jevons, *Lessons*, p. 256.

logical thing to do is to restrict the term induction to induction proper, to the process of inferring a general truth from particular instances, and to use another name for the combination of this process with deduction. In his smaller book Jevons calls this method, which he designates as induction in his *Principles of Science*, the combined or complete method. "What Mr. Mill has called the deductive method, but which I think might more appropriately be called the combined or complete method, consists in the alternate use of induction and deduction. It may be said to have three steps, as follows:—(1) Direct induction; (2) Deduction, or, as Mr. Mill calls it, ratiocination; (3) Verification. The first process consists in such a rough and simple appeal to experience as may give us a glimpse of the laws which operate, without being sufficient to establish their truth. Assuming them as provisionally true, we then proceed to argue to their effects in other cases, and a further appeal to experience either verifies or negatives the truth of the laws assumed."

5. There is another point to be observed. It is held that when I infer from one or more cases to all like them, I base myself either consciously or unconsciously on the principle of the uniformity of nature. That is, I reason thus: This is true of these cases; what is true of some cases is true of all like them; hence this is true of all. In other words, induction is really deduction. This, however, does not seem to me to be the case. In fact, the statement that what is true in some cases is true in every case like them, is the very thing that is inferred in induction. We infer that this will always happen because it has happened. As soon as we observe the coexistence or sequence of certain qualities several times, we naturally draw our conclusion, we make the inductive leap. We say, *sometimes*, hence, *always*. Why we do so, it is impossible to say; it is one of those inexplicable facts, a natural function of the human mind, a way we have of thinking, that is all. We expect repetition. We may have no right to expect it, but the fact remains that we do expect it and conclude that it will come. We infer when we find a ground or reason for our proposition. Everything is a ground for us that really satisfies us. Closer thinking may

destroy our satisfaction, but so long as we have grounded our proposition upon some other proposition and are satisfied, we have reasoned. We may have reasoned wrong, but we have reasoned. Inductive inference is a function of the mind aroused by the experience of recurrence, in which we regard the particular as a type, as having universal significance. It is frequently hasty and its results are frequently discovered to be false, but that does not affect its nature. The point to be emphasized here is that induction consists in making the leap spoken of, regardless of whether we have any warrant for doing so or not. We say, what is true of these particular instances is true of their class, and, after having made many such inferences, we finally reach the belief that nature at large is uniform. The belief in the general uniformity of nature is a late product in the history of civilization, and is not even universally accepted to-day. It is preceded by, and grows out of, the belief that a particular instance will repeat itself.

This brings us to our second fundamental question: What is the validity of the process of induction? What is its warrant? Here we may discuss two problems. (*a*) How can we reach the greatest possible certainty in particular inductions? (*b*) How can we prove induction in general?

(*a*) Certainty is a feeling. We feel certain that a proposition is true; the proposition is certain because it arouses in us the feeling of certainty. What must we do to reach such certainty in a particular induction? We increase our feeling of certainty in many ways. We notice that qualities go together. The more often we observe it, the more certain we feel that they will continue to go together. When we observe that when one fails to appear the other fails to appear also, and that when one varies the other varies, we feel still more certain that they go together, that our induction is true. The purpose of the so-called inductive methods is to bring this certainty to the highest possible degree. We feel most certain of propositions which have been verified countless times, and of which we have experienced no contradictory instances. It is for this reason that we strive to subsume all other propositions under such

propositions, that we try to consider them as instances of these. We have had a great deal of experience with motion, for example; hence, if we can reduce a phenomenon to motion, we feel that we know something about it. In other words, we reach the greatest possible certainty for our particular inductions when we subsume them under generally accepted principles, or *prove them deductively*. That is why sciences become more and more deductive in the course of time.

It is also to be noted here that, wherever the connection is believed to be a causal connection, one case is as good as a thousand. When I believe that two phenomena are causally related, I am sure that one will always follow the other, because causal connection means a necessary connection, because the notion of cause implies that when one phenomenon appears the other must somehow appear also. When I conceive of a particular case as a case of causality, when I say in this particular case *a* was the cause of *b*, I do not need any other cases to convince me that there is a universal relation. I conclude from one to many, because I have already assumed uniformity by assuming causality. Similarly, wherever I conceive of phenomena as necessarily related in any other way, one case is as good as a thousand. When I see that the sum of the angles of a triangle is equal to two right angles, having proved it for a particular triangle by showing that it follows necessarily from the definition of a triangle, then I am satisfied that it will be true of all triangles; and there is no need of my examining any more.

These cases, however, are not cases of induction. When I say, this phenomenon caused that one in this particular case, therefore whenever I have this phenomenon in other cases I will have the other also, I am reasoning *deductively*. By saying that a particular relation is a causal relation, I am implying that it has universal validity. I reason: If *a* and *b* are causally related, then when *a* appears *b* will appear also. Now *a* and *b* are causally related. Hence, when *a* appears, *b* will appear also. This is deduction.

(*b*) How can we *prove* induction? By proof we mean deduction. Our question therefore means: What must we do in order to deduce a conclusion which has already been derived induc-

tively? In deduction we consciously draw a proposition from premises in which it is already implied; we explicate it. Here our conclusion will give us a feeling of absolute certainty, that is, we will feel that if the premises are true, the conclusion must be true, unless we have made a mistake in our reasoning. It is not difficult to construct a syllogism in which the inductive proposition forms the conclusion. For example, if it is true that nature is uniform, that nature repeats itself, that it is a reign of law, then we have a proof for induction. One should remember, however, that this does not make induction deduction. Induction is induction; by *proving* a proposition that has been derived inductively, we do not make induction deduction, we simply apply another process, deduction, to a proposition that has already been derived inductively. The process of *proving* the inductive proposition is not induction, but deduction. Here the certainty of the proof will, as always, depend upon the certainty of the principle of uniformity. The more we believe in this principle, the more certain we shall be of our inductions, the more satisfied we shall be with them.

Induction, therefore, may be proved by assuming the law of uniformity. We are warranted in leaping from part to whole by the regularity, or orderliness, or uniformity of nature. If it is true that nature is uniform, that nature repeats itself, we have the right to conclude from a few instances to all like them. The only problem here is to discover the particular combinations, the co-existences and sequences in nature.

But the question at once arises: What warrant have we for saying that nature *is* uniform? It may perhaps be said that this principle is a postulate of thought, and that it carries its warrant in itself. We cannot prove its truth, but we feel certain that it is true; we accept it without cavil. But is it really a postulate of thought? Does everybody really accept it? Does it inhere so in the nature of our thought that we must accept it?

That depends entirely upon what we mean by it. If we mean by it the clearly conscious thought that nature at large, internal and external nature, is governed by law, that it is a unified system, then we cannot regard the principle as a postulate of thought. In this sense, it is plainly a product of development, the result of much

reflection upon the world, and even then not at all universally accepted. There are many persons who will not admit that external nature is a closed system, exempt from interference, and there are still more who will not admit that the mental realm is subject to law. Interpreted in the above sense, the principle of uniformity must be regarded as the result of reflection upon our experiences. We have noticed many particular uniformities; we conclude that nature at large is uniform, that is, we consciously ground our proposition upon our past experiences. In this sense, the principle of uniformity is an induction: Because there are uniformities, there is uniformity. And if we try to base the inductive process upon the principle thus understood, we are really reasoning in a circle, as has been so often pointed out. We prove the uniformities by the uniformity, and the uniformity by the uniformities. We say we are warranted in inferring from the particular to the universal, because nature repeats itself, because nature is uniform; and we say we know nature is uniform, because we discover particular uniformities and conclude from these that there is general uniformity.

We may, however, mean by the principle of uniformity of nature as a postulate of thought, not a clear conviction that nature as a whole is a unified system, subject to law, but the feeling in every particular case that this particular experience, will come again. Here we form no conception of nature as a whole; but every time we have a particular experience, we expect it to recur. After having a particular experience a number of times, we feel that it will come again, we expect particular things to repeat themselves. Our feeling of expectation here may be called a postulate of thought, and it becomes the psychological ground of our inductive inference. That is, there is no reason for *inferring* that a particular co-existence or sequence of qualities will recur except the *expectation* that it will recur. We feel that what happens in this particular case will happen so again, we *expect* it to happen so again; we therefore *infer* or *conclude* that, because it happened once, it will happen again. That is, I have no other warrant for inferring that a combination of qualities will recur than the feeling of expectation that it will do so.

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THE EXPRESSION OF EMOTIONS IN MUSIC.[1]

A COLLECTION of little lines, scattered about without plan or order, is a rather uninteresting, meaningless affair; it has no further significance, and thus it fails to arrest our attention, and sends us on to other, more interesting objects. If, however, the lines are grouped into a geometrical figure, *e. g.*, a square or an octagon, our eye lingers a moment longer; there is plan, unity in the grouping, and we are confronted with a recognizable form. And if, finally, they are arranged so as to give a crude representation of a house, a tree, or a human being, they immediately make an electric connection with our nature, to use an expression of Professor James; they acquire a meaning, and thus possess an interest far beyond that of the collection or the geometrical figure.

So, also, if from a distance we listen to the hubbub of noises from a busy street. At first we get merely a medley of sounds, suggestive of their various origins, perhaps, if we attend to them separately, but without any further significance. If we pick out from this auditory chaos the rhythmic clatter of a horse's hoofs, we obtain a certain individualized, ordered series of sounds, an auditory form, somewhat comparable to the geometrical figure mentioned above. If, finally, we hear somebody shout from the street, announcing some public calamity or cause for rejoicing, we immediately prick up our mental ears and strain our necks to get a glimpse of the speaker. The sounds which produce this effect also have a significance, a meaning, an important symbolic value, and it is this which gives them their firm grasp on our attention.

Poetry, painting, and sculpture deal with meanings and symbolic values like these. Their creations are enlarged and complicated cases similar to those of the crude sketch and the significant utterance. Like these latter, they represent, have meanings,

[1] This essay is a condensation, with certain additions, of the first two of a series of lectures on "The Meaning and Power of Music," delivered at the College for Women, Western Reserve University, during the autumn of 1900.

only their representations are more delicate and detailed, their meanings more extended and comprehensive. Even the highest creations of these arts form no exception to this rule; the statues of Phidias, the paintings of Raphael, the tragedies of Shakespeare, all have the function of imitating, portraying, expressing, and conveying meanings, as does the crude representation or the startling announcement from the street.

What, then, is the case when we turn from poetry and the fine arts to music? If I sound a tuning fork or strike the note C on the piano, nobody will find a representative value in the tone he hears; this tone is a mere tone, and, as such, corresponds to one of the scattered lines, or one of the meaningless sounds referred to. Even when I combine it with E and G, I am confident in asserting that the resulting triad embodies no representative or expressive value, no meaning or significance, similar to that which we discovered in the sketch or the startling announcement. It corresponds rather to the geometrical figure formed from the scattered lines: it is an auditory form, pleasing to the ear, to be sure, but without any further recognizable purport. Indeed, even when I bind together a few elementary chords in successive tone-combinations, as students of harmony do in their first exercises, meaning and significance would still seem to be lacking; I merely get an *extended* auditory form, a *succession* of pleasant tone-combinations, similar in its members to the triad C, E, G, and with an agreeable interconnection of these members. If the triad was comparable to a regular geometric figure, the chord-sequence in question is comparable to a shifting, connected series of such figures, similar to the changing shapes of a kaleidoscope.

Now, does the matter assume a different aspect when we come to longer musical passages, worked out in greater complication and detail, or to complete compositions, like the sonatas and symphonies of Beethoven? The scattered lines and the sounds from the street assume a representative, expressive nature; does the music in itself also become expressive of extraneous facts?

The question, simple as it seems, does not admit of a simple answer. It is a question, indeed, to which the answers have been

highly divergent, and which has formed the basis of endless controversies. On the one hand, there are the 'formalists,' headed by the brilliant Viennese critic, Eduard Hanslick, who maintain that music is nothing but a beautiful play of tones—tones which are effective solely through their formal relations, and without pointing to or imitating extra-musical realities. On the other hand, there are the 'expressionists,' who maintain that music, like poetry and the fine arts, has, in addition to its purely formal aspect, a significant content, a meaning, on which it depends for its main effect, and which raises it from the level of a worthless kaleidoscopic pastime to that of a true and noble art.

The decision between these two views, as just stated, is not an easy matter. True, if music consisted only of the isolated tones and chords, or the harmonic exercises, mentioned above, we should not long hesitate as to our decision, but should immediately take sides with the formalists. But when we turn to compositions like the Pastoral Symphony of Beethoven, with its "Scene at the Brook," its "Peasants' Merry-Making," its "Storm," and its "Shepherd's Song," in which states of mind as well as objective occurrences are so charmingly suggested; when we recall the wonderfully descriptive overtures of Mendelssohn, the vivid tone-pictures of Berlioz, the exquisite sketches of Schumann; and when, finally, we consider the masterful delineations of emotional conditions and external events throughout Wagner's music-dramas — as exemplified, for instance, in Tannhäuser's description of his journey to Rome and the "Ride of the Valkyries" — we must certainly agree that the expressionists are not theorizing on air, and that it will not do lightly to pass over their arguments.

In view of such compositions, I think we cannot help admitting that music can and may represent extra-musical things. In the first place, it is able directly to imitate certain natural sounds, such as the songs of birds and the noises of animals. Examples of this are found in Haydn's Creation and Beethoven's Pastoral Symphony. In the second place, it may symbolically suggest and represent many physical occurrences, through similarity of motion. It can flow along smoothly, swell forth suddenly,

gently subside again, sweep by majestically, burst forth in crashes, trip lightly, rustle delicately, move hesitatingly, boldly, calmly, playfully. And through these modes of motion it is able to suggest, and in a symbolic way portray, many natural, as well as artificial occurrences and actions. It can represent the fury of the storm, the bubbling of the brook, the rustling of the wind, the rotation of the spinning wheel, the trotting of the horse, and innumerable other poetic manifestations of nature and life. Examples of such dynamic tone-painting abound throughout musical literature. The storm scene of Beethoven's Pastoral Symphony, the prelude of Wagner's *Walküre*, the "Waldweben" of his *Siegfried*, and all the numerous spinning and cradle songs, are familiar examples. Thirdly, since emotional states also have a sort of internal motion, which can be pictured by the musical flow, music is able to portray and give expression to them. We have agitated, calm, stormy, hurrying, hesitating, rushing, energetic, playful states of mind and soul; and these are expressible through the similar and corresponding progressions of music.

The important question now arises whether music *must* thus, like poetry and the fine arts, give expression to extra-musical facts, whether it is of its *essence* to portray and imitate, and whether portrayal and imitation are a criterion of the value of any particular composition? Here we may at once drop the first two kinds of portrayal mentioned above, those, namely, of external, material sounds and occurrences; for, although we meet with them frequently enough, they are, on the whole, of a sporadic and interspersed nature: they occur in such relative scarcity that nobody, so far as I am aware, has ever yet sought for the office and function of music in them. It is rather the portrayal and expression of emotions which has at all times been regarded as the peculiar business of music, and, in my endeavor to decide between the expressionists and the formalists, I shall regard only this aspect of the matter. I shall ask myself: Is music merely a formal play of tones, a sounding kaleidoscope, as it were, without further import or meaning? Or has it, rather, the peculiar office of representing and giving expression to the emotions?

My position in this matter is a compromise, based upon certain distinctions between the meanings of the word 'expression.' In one sense of the word, I believe the formalists are right, in the other, the expressionists; but, on the whole, I incline rather toward the position of the formalists, whose use of the word I consider a more precise one, and one more in harmony with its use in the other arts. If we mean by 'expression' that which corresponds to the definite embodiment of ideas in works of literature, or the definite representation of forms and scenes in sculpture and painting — if we take it as approximately synonymous with 'representation,' 'portrayal,' or 'imitation' — then I should say that the formalists were right, and that it was not the peculiar office of music to express or represent emotions. This is the sense in which we have been taking the word thus far, and I shall adhere to it for the time being, postponing a consideration of its other meanings until later. My contention will then be, that it is not of the essence of music to express emotions, that it need convey no meanings, and that its effectiveness, so far as apparent,[1] flows entirely from the mere tones by themselves and their combinations.[2]

In support of my view, I think it can be shown, in the first place, that there are innumerable compositions, many of them even masterpieces, in which we can detect no expression of feelings whatsoever, or in which such expression is not at all clearly evident. As Gurney says, "The great point, which is often strangely ignored . . . is that *ex*pressiveness of the literal and tangible sort is either *absent or only slightly present* in an immense amount of *im*pressive music; that to suggest describable images, qualities, or feelings, known in connection with other experiences, however frequent a characteristic of music, makes up

[1] I am careful to say, 'so far as apparent,' because the charm of music, although seemingly residing in the bare musical forms, might nevertheless be due to the hidden, unapparent relations of these forms to extra-musical things. The forms might, for example, be representative of the world-will, as Schopenhauer has suggested, and might owe their charm to this fact.

[2] I do not, of course, claim originality for all of the succeeding arguments, which have already for the most part been brilliantly stated in the pages of Hanslick and Gurney. All that I claim is to have clothed them in somewhat different terms, and to have brought them forth in new shapes and combinations.

no inseparable or essential part of its function; and that this is not a matter of opinion, or of theory as to what should be, but of definite, everyday fact." [1]

Take, for example, the *Andante* from Beethoven's tenth sonata. Surely an exquisite little piece, sparkling with beauties, in which almost every measure, like a separate gem, contains charms of its own. Yet could any one detect in it the expression of emotion? Does the emotion lie in the first measures? Or does it lie in the first part of the piece as a whole; and, in that case, are the other parts mere continuations of the same emotion, or does every part express a different emotion? Or, finally, is it exhaled by the composition in its entirety, rather than by any particular sections thereof? For myself, I confess that I am unable to detect the expression of emotion in either the separate parts or the composition as a whole; and yet I have frequently derived genuine æsthetic enjoyment from this composition. My enjoyment, however, was based entirely on the peculiarly musical aspects of the piece; in hearing the same, I should, to use Gurney's words, be more likely to exclaim: 'How beautiful!' or 'How indescribable, how utterly a musical experience!' than 'How exceptionally peaceful!' or anything of the sort. I enjoy the simple, delightful character of the main theme, the exquisitely appropriate changes from *staccato* to *legato* and from *piano* to *forte*, the interesting disguises of the theme in the variations, and the admirable grouping of these variations. I enjoy the music of it all, the pure music, its melody, harmony, and rhythm; I seek for no extraneous meaning: the tones are complete and perfect all by themselves, and stand in no need of further commentary in order to thrill and satisfy me.

The same is true with many other compositions. Take Chopin's waltz in A flat major, for example, or the minuet from *Don Juan;* take the fugues of the old contrapuntal masters, or the dance tunes of our own times: surely, it would seem somewhat arbitrary and unnatural to regard these as expressions of the emotions. Dance music may be gay in character, but we could hardly say, as a rule, that it was an *expression* of gayety: it *is*

[1] *The Power of Sound*, p. 314.

gay, but does not represent or express gayety. The main body of our enjoyment, in such music, certainly depends on purely musical elements, on the sweeping rhythms, catchy melodies, and sensuous beauty of the tones. But, as Hanslick says, in commenting on the wholesale exceptions to the expressionistic thesis: "If large departments of art, which can be defended both on historical and æsthetic grounds, have to be passed over for the sake of a theory, it may be concluded that such a theory is false." [1]

These considerations alone, it seems to me, would suffice for the establishment of the conclusions which I seek; but they are supplemented by others of almost equal force. Not only do we possess highly effective compositions without any recognizable expression, but we also possess expressive compositions with but moderate or little effectiveness. I refer especially to many of our operatic recitatives, which are written with a view to the faithful interpretation and support of the words, but which are often painfully tedious. I refer, again, to much of the programme-music of our own day, the avowed purpose of which is to represent and express, but which often falls far short of the excellence of the less expressive classic compositions. All degrees of effectiveness or ineffectiveness, indeed, are found coupled with expression. While expression does not necessarily point to effectiveness, however, formal beauty — beauty of melody, harmony, counterpoint, or rhythm — always does; we can always say with respect to a beautiful composition: 'What exquisite melody!' 'What rich harmony!' 'What interesting rhythm!' 'What magnificent counterpoint!' or something of the sort — but not necessarily: 'What wonderful expression!'

And, as we may have all degrees of effectiveness accompanying expression, so, to approach the question from the other side once more, we may have all degrees of expression accompanying effectiveness (or ineffectiveness). Many beautiful compositions, we have seen, are characterized by no expression whatever; but even where there is expression, it is in no constant relation what-

[1] *The Beautiful in Music* (translated by Gustav Cohen, London and New York, 1891), p. 43.

ever to the effectiveness. It may range through all degrees of prominence — from its most incipient and vaguest presence to the very definite and pronounced delineation of programme-music — without offering us thereby the least indication of the value of the music. We have little or no expression in many of the fugues and instrumental works of the older masters, and considerable in our modern romanzas and recitatives — and yet the former may be on a par with the latter, or even outrank them in beauty. We have more expression in Beethoven's fifth and sixth symphonies than in his eighth, and yet one would hesitate offhand to pronounce any one of these markedly superior to the others. Marx divides music into three classes: tone-play, language of feeling (or music of the soul), and ideal representation (or music of the mind and spirit); and he places Beethoven's giant sonata, Op. 53 — the grand *Waldstein* sonata — into the class of mere tone-play, while sonatas like numbers one and two find their places under the heading of language of feeling. Yet who would for a moment dream of setting these earlier compositions above the magnificent *Waldstein?*

In view of all these converging and mutually furthering lines of argument, it would seem as if our conclusion ought now to stand forth clearly. The whole literature of music, indeed, appears like an elaborate, systematic experiment, which demonstrates that musical beauty is not bound up primarily with the expression of emotions. This conclusion might perhaps have been arrived at even more quickly through methods of direct introspection. A careful examination of our state of mind, during the appreciation of a piece of music, would show, I think, that our enjoyment had its main roots, not in the recognition of any expression, but in the unique, indefinable, intrinsically musical qualities of the tones. The greater part of the musical beauty, from the point of view of expression, is left unaccounted for, and falls through the meshes of the interpretations. The expression becomes evident only upon the hearing of longer sections, or crops out merely at isolated moments, while the enjoyment is always present, and drops into the mind measure by measure, or even note by note. Even the most extreme expressionists, I believe, admit

that the interpretation cannot be hunted down to the individual measures and notes. Would not the conclusion seem to follow, then, that the musical beauty which adheres to the measures and notes, is not dependent on expression and interpretation?

But, pending the personal introspection which would be necessary for the establishment of this conclusion, the differences in the amount of expression which various people see in the same compositions, and the similarity of the enjoyment which may accompany all these differences, point to the same conclusion. We may have the most elaborate, minutely-detailed interpretations, on the one hand, and a total lack of all interpretation whatever, on the other, with many intermediate degrees between the two, and yet the enjoyment may in all cases be equally deep and genuine. Gustav Engel, for example, finds in the introduction to the second act of *Fidelio* the portrayal of the undeserved, severe suffering of a noble man, who, for the sake of virtue and justice, has become the victim of a villain. Hanslick, on the other hand, would probably find very little representation or expression whatever in this passage; and yet Hanslick's enjoyment is presumably just as real as Engel's. It is, of course, allowable to read meanings into music, and with some people such a procedure will cause a marked heightening of pleasure. What I maintain is that musical enjoyment is, in its essence, not dependent on such interpretations, and that it may also be reaped by those who abstain from making them.

This, indeed, is the crucial point, that compositions may be thoroughly enjoyed, not only by those who see in them the definite expression of emotions or other extra-musical facts, but also by those who regard them as purely formal combinations of tones. We may have interpretations of all degrees of definiteness — from the minutely detailed ones, similar to Engel's, through ever less and less detailed ones, down to the lack of all interpretation whatever, in formalists like Hanslick — and yet, we may venture to say, the enjoyment may be equally deep and genuine in all cases. This enjoyment can be explained just as easily by referring it to the exquisite instrumentation, the rich, unusual harmonies, the wonderful melodies, etc., as by appealing

to the emotions which are supposed to be depicted. What I mean is, that we need think of nothing but these beauties of instrumentation, harmony, and melody, as the cause of our enjoyment, without making any reference whatever to external meanings. We are, accordingly, brought back once more to the formalistic conclusion, that the expression or portrayal of emotions is not an essential function of music, and that this art is primarily nothing but a beautiful play of tones.

I would repeat, however, that this conclusion is bound up with one particular meaning of the word 'expression,' and that there are other meanings, in accordance with which it may be proper to speak of music as an expression of the emotions. It might be well to bring all the meanings together in one statement, for their better comparison and distinction. The following sentence will subserve our purpose: "The thoughts which Emerson expresses in these sentences, and which express so beautifully the underlying soul-life of the man, express much that I have often vaguely felt, but have never been able to express." In this statement there are at least three distinct meanings of the word in question.

The first meaning refers to the definite, specific thoughts formulated by the sentences under consideration, to that which they alone denote, and which perhaps no other sentences ever written precisely convey. It refers to their contents *par excellence*, to the ideas which they embody and present, as on an intellectual plate or tray, and as they are opposed to thousands of other ideas which they might possibly have embodied. Thus, if one of the sentences reads: "Self-trust is the essence of heroism," this sentence would, in the first sense of the word, express simply this fact, that self-trust is the essence of heroism, not that self-trust is not the essence of heroism, or that heroism is fine, or that two times two make four. In this sense, literature expresses or represents life; and in this sense, as we have seen, music need express nothing at all, and Hanslick is justified in calling it a purely formal art.

The second meaning, contained in the clause: "which express so beautifully the underlying soul-life of the man," does not refer

to the directly formulated content of the sentences, to that which they were *intended* to formulate, but to a secondary manifestation or side-branch thereof, to something which they exhale, as it were, and which is additional to their main purpose. It is in this sense that a man's literary or artistic taste expresses the nature of his education; or his walk, voice, carriage, handwriting, and the like, give indication of his temperament and character. This use of the word is entirely distinct from the first. We might substitute certain other sentences for those under consideration, thereby completely changing their expression according to the first sense, and yet keeping the other intact; for the substituted sentences might be as good an embodiment of Emerson's soul-life as the original ones.

The third meaning—embodied in the words: "express much that I have often vaguely felt"—differs from both the other meanings. What is here expressed was already present in the mind, although vaguely and indistinctly, and the word 'express' refers rather to its matching and reflection than to the formulation and presentation of definite new thoughts; it refers rather to the correspondence of the thoughts phrased with my thoughts, than to their own specific content. The same sentences of Emerson might, in this sense of the word, exactly express what one person feels or thinks, and the opposite of what another feels or thinks; and yet they would be identically the same sentences, in both cases, and would all along be expressing the same thoughts and personal traits, in the first two senses of the word.

The case of a pianist performing before an audience will also serve to illustrate the various species of expression. In the first place, the composition he is rendering may be expressive and representative of objective facts and feelings. This would correspond to the direct, specific embodiment of thoughts in the sentences above. Then, again, being selected by the virtuoso in preference to other compositions, it may be expressive of his tastes and personality—which would correspond to the reflection, in the sentences, of Emerson's nature and soul-life. And, finally, it may be expressive of the feelings of the listeners, in the sense in which the sentences are expressive of the reader's thoughts.

If a distinct designation of these various species of expression were desired, we might style the first an expression of *direct embodiment, representation, denotation,* or *content.* The facts expressed are represented or denoted by the words or tones, and directly held forth as their content. Three elements or factors are present in this sort of expression, two of them objective, *i. e.*, the work itself and its expressed content, and one of them subjective, the perceiving mind.

The second kind of expression, typified in the indication of the author's or virtuoso's personality, might be styled an expression of *indirect embodiment* or *connotation.* In this case the things expressed are not directly embodied or held forth, but are merely reflected or hinted at in a secondary, indirect manner. As before mentioned, it is in this sense that a man's footstep, carriage, handwriting, gesturing, etc., are expressive of his personality. It is not of the purpose or essence of these things to give indications of personality, and yet they may cast them off as side-gleams or exhalations. Though not *denotative*, they are *connotative* of the personality behind them. In the case of this second sort of expression, likewise, three factors are present: the expressing medium, the thing expressed, and the perceiving mind.

The third sort of expression, finally—typified in the agreement with the reader's thoughts or the arousal of the listener's emotions—may be designated as an expression of *parallelism, contagion,* or *sympathetic arousal.* The words or tones run along, as it were, in parallel motion with the thoughts or feelings; they form a sort of reflection of them and sympathetically awaken and nourish them. Only two elements or factors are operative in this case, instead of three: one is objective, the expressing medium or work, and the other subjective, the perceiving individual. The expressed content lies in the subject himself, instead of in the object, and the expression consists in drawing this forth and harmonizing with it, rather than in the presentation of a novel, objective content.

Now music in its entirety, like the single composition of the virtuoso, may be expressive in various senses: it may be so by denotation, by connotation, and by contagion or sympathetic

arousal; but not all the different varieties are equally important. The first kind, as above indicated at some length, is not essential in nature; I regard it merely as an incidental and contingent factor; I agree with Hanslick that the intrinsic beauty of music is in no wise bound up with it, and that, while certain compositions may, to be sure, make use of such expression, great numbers of the finest works show hardly a trace of it.

The second sort of expression — by indirect embodiment — is also present in music: since everything we do or construct is capable of embodying expression in this sense, music, of course, is equally significant. But here, likewise, the beauty and effectiveness is in no wise bound up with the expression. Just as a disagreeable style of shaking hands or laughing may form an excellent indication of personality, so a mediocre composition may afford us a good insight into the nature of its composer or performer. The amount of connotative expression and the artistic excellence, in short, stand in no constant relation whatever to each other.

In regard to the third sort of expression, on the contrary, the case is different. Here I am not disinclined to agree with the expressionists, that expression forms an integral part of the very essence and purpose of the art, and that in its absence music sinks to a mere empty jingle of sounds, or to a dry and quasi-mathematic, intellectual pastime. I do not positively uphold this view, but merely grant its plausibility. Just as a speaker's peroration or poet's verse may exactly voice and match one's sentiments and thoughts, fitting them so beautifully as almost to draw them forth with magnetic force, so music, when one fully enjoys it and is completely carried away by it, might be held to elicit and draw forth the feelings, swaying to and fro with them as in a delightful dance of the soul. Every inner tension, every shade of feeling, is matched and answered by a corresponding movement of the tones. Our feeling, for instance, may be swelling with a *crescendo;* then, just as it is about to call out 'enough!' and ask for a *diminuendo*, lo! the tones have answered its call and the *diminuendo* has set in. Every tone of the musical progression finds a corresponding resonator in the soul, every slight-

est tendency of the soul finds firm, supporting arms in the music, which steady it and lead it to its fullest realization. Doubtless it is this arousing, furthering, and supporting of the feelings, this reciprocity of motion, this fluent 'give and take' between the feelings and the musical progressions, this delightful interplay of stimulation and response, on which the expressionistic thesis is largely based. But it is not necessary definitively to decide on the legitimacy of its conclusions at the present moment. The important thing to remember is, that there are various kinds of musical expression, and that the art of tones may very well be bound to the observance of one of these kinds, and not to that of the others.

It would be in order now, to prove that the actual differences of opinion, in reference to this subject, have had their basis in the different interpretations of the word 'expression,' and that, while one of the contending parties has upheld and the other denied the necessity of expression, both have had different kinds of expression in mind. Let us begin with the champion of formalism, Eduard Hanslick, and examine his use of the critical word. "The subject of a poem, a painting, or statue," he says, "may be expressed in words and reduced to ideas. We say, for instance, this picture represents a flower-girl, this statue a gladiator, this poem one of Roland's exploits. . . . The whole gamut of human *feelings* has with almost complete unanimity been proclaimed to be *the subject of music*. . . . According to this theory, therefore, sound and its ingenious combinations are but the material and the medium of expression, by which the composer represents love, courage, piety, and delight. . . . The beautiful melody and the skilful harmony as such, do not charm us, but only what they imply: the whispering of love, or the clamour of ardent combatants." [1]

It is quite clear that Hanslick is using the word in its first sense; and the same is true likewise of that other profound and logical upholder of the non-expressive nature of music, Edmund Gurney. In Chapter XIV of his important work, *The Power of Sound*, he says: "So far we have been considering music almost

[1] *Op. cit.*, pp. 32 ff.

entirely as means of *im*pression. . . . We have now to distinguish this aspect of it from another, its aspect as a means of *ex*pression, of creating in us a consciousness of images, or of ideas, or of feelings, which are known to us in regions outside music, and which, therefore, music, so far as it summons them up within us, may be fairly said to *express*."[1]

Turning to the champions of musical expression, we first meet with the æsthetician, Hand. In his treatise, *Æsthetics of Musical Art*, he devotes considerable space to a consideration of the relations between music and the emotions. So far as I have read the book, I have met with no distinct and exact definition of the word 'expression,' but from numerous passages it is clearly evident that his conception of the same is entirely different from that of Hanslick and Gurney. "Representation and idea," he says, "choose the words of language for their tokens, but where the feeling attains to expression without further mediation, musical sounds serve it. . . . [Music] gives only feelings and inner emotions — without signs that may be immediately associated with an idea, and not imitatively, whereby comparison may be made with an original. . . . We do not wish to perceive individual things, which, for the most part, fall to the lot of sensuous contemplation, nor does the real listener to music seek for a translation into ideas. . . . Truly, we cannot expect objective representations in music, but only inner conditions of life, and even these not in abstractions, but in immediate appearance, and for direct transmission into other souls. The excited and moved life of him who sings and produces music, propagates itself, exciting and moving, into the soul of the listener, and a more intimate conformity and blending is not possible. . . . The play of tones transplants us into the same state of feeling, and thus verifies the contents."[2]

It is evident, I think, that Hand has the third species of expression in view. His remarks about the moved life of him who produces music propagating itself, exciting and moving, into the soul of the listener, and about the play of tones transplant-

[1] *Op. cit.*, p. 312. See also the quotation above, on p. 416.

[2] Quoted from various sections of the translation by Walter E. Lawson, London, 1880.

ing us into the same state of feeling, and thus verifying the contents, seem to leave no room for any other interpretation. But still more certain is it, that the expression and representation he would claim for music is not of the first kind, dwelt on by the formalists. His divergence from the position of the latter is also brought to view clearly in the light of two statements from the authors before considered, the first of which is from Gurney and the second from Hanslick: "However *im*pressive a phenomenon may be, . . . we have no right to call it *ex*pressive, unless we can say what it expresses";[1] and "The query 'what' is the subject of the music, must necessarily be answerable in words, if music really has a '*subject.*'"[2] Compare with this Hand's statements that the real listener does not "seek for a translation into ideas," and that music gives feelings and emotions "without signs that may be immediately associated with an idea, and not imitatively, whereby comparison may be made with an original," and the conviction must settle upon the mind that the two parties are disputing about altogether different things.

But Hand is not alone in his interpretation of the subject. Ambros, in his treatise, *The Boundaries of Music and Poetry*, says: "Music conveys moods of finished expression; it, as it were, forces them upon the hearer. It conveys them in *finished* form, because it possesses no means for expressing the previous series of ideas which *speech* can clearly and definitely express. . . . Now, *the state of mind which the hearer receives from music he transfers back to it;* he says: 'It expresses this or that mood.' Thus music receives back its own gift, and thus we perceive how the best intellects . . . could claim for music, as a fact beyond doubt, so to speak, the 'expression of feelings.'"[3]

Again, it is the third meaning of the term 'expression' on which the expressionist conclusion is based. The differences of interpretation, accordingly, seem to oscillate between the first and third uses of the word; but the second is sometimes also employed, as witness the following quotation: "The musician formulates the direct expression of man's innermost feelings and

[1] *Op. cit.*, p. 125.

[2] *Op. cit.*, p. 162.

[3] *The Boundaries of Music and Poetry* (translated by J. H. Cornell, New York, 1893), p. 53.

sensibilities. . . . The story of music has been that of a slow building up and extension of artistic means of formulating utterances which in their raw state are direct expressions of feeling and sensibility."[1] The term 'direct' must not mislead us into the belief that the author is here referring to expression by denotation; the connotative nature of the expression is confirmed a moment later, when the "dog reiterating short barks of joy . . . at the sight of a beloved friend or master," is instanced as a case of direct expression. To be sure, the author is not at present engaged in a consideration of the subject of formalism and expressionism: the quotation was introduced merely to show how indiscriminately all three interpretations are employed, and how, in consequence, misunderstandings can easily arise.

Is it a wonder, indeed, in view of the uncertain, shifting nature of the term 'expression,' that disagreements and controversies should result? And is it not evident that the variety of interpretations is, in fact, to blame for the differences of opinion? Ordinarily, of course, the use of the word 'expression' is attended by no difficulties, and there is no necessity of making its exact signification plain; but the art of tones seems to be a sort of critical region, where the various meanings diverge, and where the most various results ensue, according to our emphasis on the one or the other interpretation.

The question may now be asked: Which one of the interpretations is the more proper? To me it seems, as indicated above, that the preference should be given to the first, as agreeing most closely with the use of the word as applied to the other arts. We should hardly refer, when asked for the content of poetry or landscape-painting, to the mental and emotional states they arouse and express, but rather to the thoughts and scenes they set forth and portray. It is the absence of such a definite content in music that throws our mind over to the other sort of expression — by sympathetic arousal — and that leads us to regard music as an expression of the emotions. Poetry, likewise, might be considered expressive in this sense; the feelings it arouses, it seems to me, sway along with the words in very much the same manner in which the emotions awakened by music cling to the

[1] Parry, *The Art of Music* (New York, 1893), p. 4.

tones. But since poetry also has its direct, denotative sort of expression, we pay attention mainly to this, letting the other drop out of sight. If, however, instead of playing on our emotions with tales of love, war, heroism, and the like, and thus conveying definite, attention-absorbing meanings, it were to do so by symbolic means, by verses without any specific meanings, but which, nevertheless, aroused the same emotions as the representative words, some of the attention now bound to the specific content of the words would be set free, the rise and fall of the feelings in accordance with the cadences of the symbolic verses would obtrude itself, and poetry might also, like music, come to be regarded as an art which had the feelings for its subject-matter, and whose function it was to express these feelings.

And yet it would have gained this function, not by an addition of content, but rather by a loss; by the loss, namely, of those definite ideas which at present it is its function to express. Music, it seems to me, corresponds somewhat to such a denuded poetry — a poetry divested of its definite meanings and producing its emotional effects by mere symbols. If we are to adhere to one point of view, and pull together with the other arts, we are bound to say that music expresses nothing and has no contents in the sense in which this can be affirmed of the other arts.[1]

However, an author has the right to use his terms in any legitimate sense he pleases; and, if he chooses to employ the word 'expression' with another signification, we have no alternative but to follow him and judge of his statements from his own point of view. The important thing to establish is the fact that there *are* different interpretations and points of view, and that the differences of opinion are due to this circumstance. This, I dare to hope, has been accomplished in the preceding pages. The formalists, as we have seen, are right when they maintain that music need not be expressive in the sense of a definite portrayal or denotation; and the expressionists may be right when they insist that it shall awaken, nurture, and harmonize with the feelings, and thus express them by contagion or sympathetic arousal.

ALBERT GEHRING.

[1] This, of course, forms no contradiction to the statement made above, that music can and may, incidentally and secondarily, express external things and emotions.

REVIEWS OF BOOKS.

Grundzüge der physiologischen Psychologie. Von WILHELM WUNDT. Fünfter völlig umgearbeitete Auflage. Bd. I u. II. Leipzig, Engelmann, 1902. — pp. xv, 353; viii, 686.

The completion of the fifth edition of Wundt's chief work on psychology may be anticipated as the culminating point in the career of a great man of science. Although the second of the two volumes now before us does not even carry the discussion through the subject of sense ideas, and leaves the fourth, fifth, and sixth parts, on "Gemüthsbewegungen und Willenshandlungen," "Bewusstsein und Zusammenhang der seelischen Vorgänge," and "Ursprung und Principien der geistigen Entwicklung" for a third volume, yet the mass of new material already published is so considerable that only the most summary consideration of it is possible within the limits of a single review.

It will be seen from the headings just quoted that the work has been rearranged. In the fourth edition, "Gemüthsbewegungen" were treated under "Bewusstsein und Verlauf der Vorstellungen," and apart from the discussion of the will. The portions of the fifth edition that have been published also show some noteworthy changes in the order of treatment. Decidedly the most important is the reorganization of Part III, on the formation of sense-ideas. The fourth edition treated successively touch and movement ideas, auditory ideas, visual ideas, and elementary æsthetic feelings. The fifth edition uses instead of this division — which, as based on a relation of sense ideas to sense organs instead of on their internal character, may be termed physiological rather than psychological — the division of the *Outlines*, into intensive, spatial, and temporal ideas. Another considerable rearrangement, considerable in extent at least, is the introduction, in Part I of the chapter on Physiological Mechanics of Nerve Substance, before instead of after those on Development of Forms in the Central Organ, and Course of the Paths of Nervous Conduction. Further instances of change in the order of treatment, such as the different classification of geometrical illusions, involve the introduction of so much new material as to be practically reconstructions.

Besides rearrangement, the altered features of the fifth edition are, naturally, the omission of old matter and the insertion of new. As the greatly increased bulk of the work indicates, the omissions are

relatively inconsiderable, being mostly the dropping here and there of discussions on topics no longer of current interest, such as the relation of 'Seele' and 'Geist,' and a criticism of faculty psychology, which, occurring in the introductory chapter of the fourth edition, are now replaced by an outline of the plan of the book. Wherever possible, the form of expression has been condensed to make room for the new material that offered itself in such abundance. This latter came from two sources: on the one hand, the results of psychological research within the last ten years; and, on the other, the changes that have taken place in Wundt's own attitude on theoretical points, his re-thinking of certain problems. The second source has of course the greater interest. It does not, however, seem possible to draw a hard and fast line between the two classes of changes as one surveys them: sometimes, for example in the case of the more genetic treatment of sensation found in the present edition, it would be difficult to say whether the causes of the alteration were more objective or subjective. It will be best, perhaps, to follow the chapters through in order and note as they occur the modifications that have made this book, in the author's words, "almost a new one."

In Part I, on the nervous system, practically all the noteworthy changes have occurred as a result of recent investigations in nervous physiology, the development of the neuron theory, and the more detailed tracing of sensory and motor paths. There is indicated one modification of attitude on Wundt's part: a much more definite assertion of the inhibitory character of the apperception center's functions (*e. g.*, I, 326). The tendency towards a mechanical interpretation of the movements of protozoa, shown in all recent biological research on the subject, calls forth a more emphatic assertion of the Wundtian doctrine that consciousness accompanies the earliest and simplest animal movements — an assertion supported chiefly by the statements that the amoeba returns to a supply of food, and that many ciliate infusoria chase others with murderous intent (I, pp. 21–22). The sections on the visual and speech centers now contain (pp. 312ff.) a discussion, practically identical with that in the *Völkerpsychologie*, of the associations involved in the word as a conscious process.

Part II begins with a new and much needed chapter on "The Fundamental Forms of Psychic Elements." One naturally turns for comparison here, not to the fourth edition of the *Physiologische Psychologie*, but to the last edition of the *Outlines*, whose classification of conscious processes is repeated and more fully discussed. The epistemological basis of Wundt's division of mental elements is stated with the utmost

clearness on page 345. "We may," he says, "divide all the contents of consciousness into objective and subjective, understanding by these terms simply the fact that the former are referred to external objects given to the perceiving subject; the latter, on the other hand, directly to the state of the subject himself." To these two classes correspond ideas and affective processes; analysis of ideas yields sensations as mental elements, that of affective processes yields feelings. On the next page, Wundt rejects the useful distinction between perception and idea, because it "mixes the psychological fact with an epistemological reflection"; one might make a fair comment of the *tu quoque* order. Professor James's anti-analytic position is attacked in a note (page 357) on the ground that, as one must analyze in some sort to write psychology at all, refusing to search for elements is merely putting an arbitrary limit to one's analysis.

The most striking new feature in the chapter on "The Physical Conditions of Sensation," aside from the modifications occasioned by the results of research in taste, smell, and the dermal senses, is the genetic treatment above mentioned. The development of the sense organs through the lower forms of animal life is discussed with some detail, the relationship of the organ of hearing to the 'tonic' organ, and that of all the senses to touch being fully considered.

Wundt's interpretation of Weber's Law gets a new and clearer formulation in the treatment of sensation intensity. The motive for this alteration is found in the examination of Merkel's Law, which is explained as involving absolute instead of relative comparison of sensation differences, because (1) the differences are far above the limen, and (2) three sensations instead of two are compared in each experiment. Weber's Law is still based on the principle of relativity, but this principle is now declared to hold only for intensity comparison. In a note on page 544, the author answers Ebbinghaus's criticism of the psychological interpretation, to the effect that if it were true Weber's Law ought to hold for pitch differences, by saying that Ebbinghaus evidently fails to observe the fact that "we are not comparing vibration rates but tone qualities." This limitation of the principle of relativity to the comparison of sensation intensities is obviously a point of great importance in Wundtian doctrine.

Under "Tast und Gemeinempfindungen," in the chapter on "Quality of Sensation," there are included the results of research on pressure, temperature, and pain spots: the sensation of pain is now classified as a skin sensation instead of under organic sensation alone. There is a new and full discussion of the central components of the

consciousness of movement. To account for the apparent absence of specific end-organs for warmth and cold, these sensations are explained as due to inhibition or increase of the normal process in the nerves supplying the skin, occasioned by the contraction of blood vessels through cold and their dilation through heat. "According to this hypothesis, temperature points are to be regarded simply as those places on the skin where vasomotor fibres of a particular kind, constrictors in the case of cold points, dilators in that of warm points, are specially easy of access to external stimuli" (II, 15).

The new material in the sections on smell and taste comprises mainly the genetic discussion of these senses and their relation to touch, together with a consideration of recent experimental work, especially that of Zwaardemaker. Noteworthy is this statement on page 62: "The experiments on taste mixture show that, aside from alkaline and metallic sensations, these four [sweet, salt, bitter, and sour], while they are functionally most important and most sharply defined by the local differences of the end organs, are certainly not the only ones. The sensation arising in the compensation of sweet and salt, in particular, is not identical with any of the others nor can it be regarded as a mere sensation of touch: it is a taste quality for which we have no definite name."

Lack of space forbids more than a mere enumeration of the additions to the section on sensations of sound. They include a fuller discussion of interval discrimination, upper and lower tone limina, temporal and change limina for tones; a completely revised treatment of beats, laying emphasis on the various psychological stages produced by the physical phenomena of interference; a much clearer explanation of combination tones; sections on 'tone absorption,' ("We may speak of tone-absorption when a single tone out of two or more completely obliterates the others in sensation, and when the phenomenon cannot be referred to the overcoming of the tones through merely intensive differences,") fusion, and noise; and a discussion of how to modify the Helmholtz physiological theory to accord with the subjective phenomena of beats and combination tones. In the paragraphs on fusion, Wundt takes, with characteristic tenacity, the part of Schulze against Stumpf.

The first subsections under "Visual Sensations," on "The Simple Colors," "Color Mixing," and "Intensity of Sensation," are comparatively little altered, but the treatment of adaptation is necessarily almost entirely new, and, of course, greatly modifies the discussion of the distribution of color and brightness sensibility on the retina. Basing the

statement on the experiments of his pupils Hellpach and Sherman, Wundt maintains that the distribution of color sensibility is not influenced by the condition of adaptation existing in the eye. The new treatment of after-images is marked chiefly by the introduction of paragraphs on Talbot's Law, by caution in the use of the term 'fatigue,' and by accounts of the quantitative work done on the course of the after-image and the time required for it to reach its maximum. The curious statement of the fourth edition, that the flight of colors occurs only after instantaneous stimulation, is repeated.

Most important in the revised discussion of contrast is the stress laid on the distinction between 'Flor-,' 'Contact-,' and 'Randcontrast.' On the basis of the results of Lehmann, Neiglick, and Kirschmann in brightness contrast, and of Köhler in color contrast, the conclusion is formulated that the two forms in the case of 'Florcontrast' follow quite different laws as regards the relation between the contrast effect and the brightness or saturation degree of this inducing field. The relation of brightness contrast to the brightness of the inducing field is a constant proportion, that is, Weber's Law holds. That of color-contrast to saturation in the inducing field is, on the other hand, an approximately absolute constant. Saturation grades being regarded as qualitative differences, we have, according to Wundt, another instance of the fact that Weber's Law applies only to intensity comparisons. In the fourth edition the law is supposed to hold for color contrast also. By the way, Fig. 207, on page 216, has been by an error reversed.

In the formulation of Wundt's color theory, the present reviewer does not note any very important change. The author makes use of the facts of adaptation, and of the difference between the behavior of brightness and color components in after images, as further evidence of the independence of chromatic and achromatic processes. And the physiological concomitant of black, which in the fourth edition was called 'a permanent excitation process in the retina,' is now explained to be an inhibitory process which accompanies every excitation process in the retinal elements, as in the nervous system throughout. For the relation of black and white, Wundt is now ready to adopt the Hering concepts of assimilation and dissimilation (II, p. 248). The theory of contrast is of necessity entirely new, since the principle of relativity can no longer apply to qualitative comparisons. In the fourth edition, one of the author's objections to a physiological contrast theory was that on this theory contrast ought to increase with the intensity of the inducing stimulation. In the fifth edition, he is

willing to admit a physiological theory for 'Randcontrast,' which does increase with the intensity of the inducing field. To explain 'Florcontrast' he has recourse in addition to the psychological principles of 'associative Angleichung und Contrast.' That is, the contrast effect produced physiologically at the edge is extended over the whole surface by 'associative Angleichung,' after the fashion of the filling out of the blind spot, while, "on the other hand, the inducing color or brightness operates first on the marginal contrast itself, and then on the diffuse contrast proceeding therefrom, in such a way as to increase the difference between the sensations." Neither the essential nature nor the necessity of this 'associative contrast' is clearly expounded.

The chapter on feeling is, as was to be expected, entirely new. Feelings are now elements, no longer 'the feeling tone of sensation.' The sections of the chapter are entitled "Methods of Feeling Analysis," "Fundamental Forms of Feeling," "Properties of Simple Feelings," "Combinations of Simple Feelings," "General Theory of Feeling." In the third section, we have a more definite statement of the relation of the six feeling directions to the properties of feeling in general than has been given before. It now appears that strain, relaxation, and the rest are components of the quality of the feeling, analogous to the three dimensional components of a movement (II, 306). But the components of a movement are present only in abstraction; is this also true of the components of a feeling quality, or are the excitation, pleasure, etc., actually separable in the conscious state by introspection? The latter is expressly denied (p. 307), and yet the examples of feeling analysis given, *e. g.*, in the passage on page 285, where the feeling resulting from entering a dark room is introspectively analyzed into unpleasantness and depression, are hard to understand except as concrete analyses. Surely, if the attempt to characterize an elementary conscious process requires a double analysis, first into properties and then into components, it would be better to give up calling it elementary, and to recognize that we are dealing with a mental complex. On page 344, Wundt distinguishes simple from complex feelings by saying that the components of the latter, simple feelings, may exist independently as 'real conscious contents,' while the components of a simple feeling result only from an abstract analysis. But we may have simple feelings with only a single component (p. 288), which comes perilously near the occurrence of a component as a real conscious content.

Chapter XII is on Intensive Auditory Ideas. The first two sections on "Auditory Ideas as Intensive Ideational Combinations," and "Forms

of Noise," are entirely new: the latter deals chiefly with vocal sounds as typical noise-forms. In the section on "Clang-Forms," the discussion of constant and variable 'Klangverwandtschaft' is the most important addition; direct and indirect tone-relationship are more fully treated than before. The principles of tone absorption and tone fusion are applied to the section on the theory of intensive auditory ideas. A noise is distinguished from a clang by the fact that tone absorption prevails in it over tone fusion; noises are "diffuse fusions of clang components and noise components proper, wherein the latter are themselves produced from tonal excitations through the process of tone absorption." A clang is a tonal fusion in which one dominant tone gives to the whole its fundamental character. Four conditions of consonance are enumerated: the number of primary difference tones — the fewer there are, the simpler the combination; the "regularity of the ratio of tone distances," *i. e.*, the fact that the fifth and fourth represent halves of the octave, the major and minor third halves of the fifth; direct and indirect clang relationship; and fusion degree.

There are no very important changes in the discussion of extensive touch ideas, unless it be the emphasis now laid throughout on the influence of visual associations on tactile localization. The revised treatment of geometric-optical illusions is the chief new feature of the chapter on extensive visual ideas. In the fourth edition, it will be remembered, these illusions were divided into two classes, illusions due to asymmetry of muscular action, and illusions affecting the manner of filling out the visual field. For this classification, obviously not based on a single principle, the author now substitutes one practically identical with that used in his *Studien* article, "Zur Theorie der räumlichen Gesichtswahrnehmungen" (XIV, 1). The divisions are now as follows: (1) Illusions of reversible perspective; (2) variable illusions of extent and direction with coöperating ideas of perspective; (3) constant illusions of extent and direction without coöperating perspective; (4) associative illusions. The section on the depth-perception differs from the corresponding passage in the fourth edition mainly in introducing a discussion on diffusion circles as a monocular factor. There is at the end of the chapter a completely revised and more systematic account of the Wundtian theory of visual space, which, however, remains the same in its essential features. It is still open to the *à priori* objection that the mental synthesis it assumes is impossible, but no *à priori* objection can preclude the admission that it takes thorough and skilful account of the facts.

We have reviewed in the briefest possible manner the modifications of old doctrine which this edition presents. Many minor points have remained unnoticed, and there has been practically no space for discussion and comment. Perhaps the foremost general impression produced by a comparison of new with old is that, while many changes have come about through various sources, scarcely any have arisen from the criticisms and attacks of others upon Wundtian theories. Wundt is influenced by new facts and by his own processes of reflection; very little by the reactions of other minds upon his doctrine.

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Life in Mind and Conduct: Studies of Organic in Human Nature. By HENRY MAUDSLEY. London, Macmillan & Co.; New York, The Macmillan Company. 1902.—pp. xv, 444.

Readers of this somewhat unusual volume will certainly not find its pages dull. If stirred in no other way, one will certainly be incited by the implied challenges which meet one at every step. In fact, the wealth of topics touched upon, the richness of material available for the author's use, the outspoken manner of treatment, and the general atmosphere of confidence, born, apparently, of mature reflection, conspire to give a quite unusual flavor to the volume as a whole. The reader may not endorse the general point of view adopted, and he may be wholly out of sympathy with many or all of the particular conclusions reached. Still, he must applaud the author constantly for seeing well when he looks, and for cleverly stating his shrewd observations. The book is made up of a series of thirty-nine essays, and, as the title suggests, these deal with varying phases of life as exhibited in individuals and in social groups. Organic Structure and Function, Social Atonement, The Ideal, Lies, War and Peace, Religion, Habit, Truth, Mental Culture, Love, Grief, Heredity, Genius, Crime, Pain, Death—these are representative topics from the Table of Contents. The avowed object of this book is "to exhibit the continuity of organic nature through all human functions—in fact, to adduce evidence for the development of life," with no thought, however, "of writing a methodical treatise nor of setting forth any system of doctrine." Modestly disclaiming for his writing any further novelty than that coming from accentuation and concurrence of material, the author appears everywhere as the genial philosopher of ripe years, surveying and interpreting the world of happenings in the light of settled convictions, wielding the instruments of thought that biology, psychology, ethics, and social science place at his disposal, and com-

menting at every point on the trend and inner significance of it all. In these respects one is reminded of Lotze. Indeed, we seem to have here before us a later *Microcosmus* in English garb.

Two points are of capital importance for the correct understanding of these essays. Though not closely articulated, though not systematically contributing to any single line of argumentation, they yet express a unified point of view to be found in the notion of 'organism.' In fact, this is the pass-word to the book. It matters not whether this organism be physical or social, its nature — its becoming — has been, and will be, determined by the processes of physical evolution. The philosophy, of which the resulting treatment is an outcome, is nowhere clearly enunciated. But chance remarks allow us to conjecture with slight risk of error that the writer is an advocate of "materialism, understood in its best sense." This point of view is consistently maintained throughout.

The second point concerns the temper of the author's mind. This may, perhaps, be characterized as a mild and sometimes genial cynicism. Regarding man as in the very nature of things victimized by illusions, as prone ever to exhibit a "colossal egotism," as necessarily believing and adoring monstrous absurdities and displaying at every point folly and short-sightedness, the author seems always — to paraphrase his own words — to embody the smiling and kindly contemptuous indulgence shown by old age to the enthusiasms and follies of youth, with a smilingly tolerant outlook on man's foibles, follies, frauds, vices, aberrations, aspirations, ambitions, and achievements. This, the author would have us think, is the only possible outcome of "viewing things calmly and at large in reason's light." Such is the spirit that pervades the book.

To pass now to more particular matters, Maudsley's psychology, springing as it does from the unbridled rioting of biological conceptions, often leaves much to be desired. One is forced to suspect that his information in this field has not undergone revision since the time of his former writings. For instance, we are told that psychology hopes one day to be *mathematical* (p. 9). Again, we are informed that psychology has been "compelled at last, after long and stubborn resistance, to admit the existence of unconscious mental processes" (p. 238). And finally, we are blandly reminded that, if we look the facts "fairly and squarely in the face," the truth must "leap to light," that the hope of knowing the mind's true nature and function "by the purely subjective method of introspection" must be "given up as exhausted, if not as barren" (p. 209). All this accords with

Maudsley's philosophy of mind. One is not always quite sure that one knows accurately what this is. There is often a baffling elusiveness in the terms employed, and, as is not seldom the case with certain writers across the channel, the words 'mental' and 'cerebral' are often hopelessly interchanged. When we can pin him down, however, we find the author stating that "in the order of nature mind is not something detached, proceeding not from it, independent of its laws, . . . it is itself nature in process of becoming" (p. 205). And again, "it is surely time to purge a vision dimmed with traditional prejudice and . . . to begin to see that the human mind is, and is to be studied as, a part of nature subject to its laws of cause and effect"; the obvious conclusion of which is, "that the study of mind ought to be prosecuted patiently by the objective method of scientific inquiry used in all the other sciences" (p. 208). Again, in complete accord with this, we are told that mind has extension in time and space (p. 229), thought being "invisible extension" (p. 238). In spite of the author's wide reading and shrewdly careful thinking in certain directions, he appears to have left untouched, or at any rate to have been untouched by, the critical writings of recent years, the just conclusions of which seem to render it impossible to make such utter confusion between 'conscious processes' and 'cerebral processes,' be the latter never so subtile, delicate, and refined. Scant wonder, then, that with these guiding thoughts the author's observation is sometimes distorted and his vision dimmed!

For Maudsley, then, man is wholly an organism. But what is more, he is a *physical* organism. 'The individual is . . . a physical variable' (p. 155). Thus it is that his follies and his destiny are determined. Our very language shows the truth of this view. For Maudsley, such terms as 're-member,' 'in-struct,' 'in-form,' 're-collect,' are used to denote mental facts not because of inherent descriptive difficulties, but because man in his language has unwittingly recognized the true mechanical nature of these processes.

If man is a part of nature,— and by nature is meant, apparently, the sum total of the processes of becoming displayed in the material world,— he must perforce exhibit those characteristics of imperfection which manifest themselves in any developing and progressing organism. Hence his unconquerable illusions. And the blame rests not with him, but with an ironical 'nature' and a bad inheritance.

Man's illusions are necessary. Nature needs them for her progress. They have their root in that "mighty conceit" man has of himself, leading to the "tremendous postulate" that the world was divinely

created for him and his uses. Thus in his "self-adoring egoism" he cherishes "the fast belief of an all-wise Providence," and believes in and frames theories of "the glorious freedom of the will and the dazzling sublimity of the moral sense." The very "lust of life" demands the continuance of such illusions. Man *must*, in truth, have ideals. For "to feign and believe themselves to be what they are not" is "the proper order of things" for human beings who are in the stream of a progressive development. Yet the irony of nature permits man only to grasp at, never actually to grasp, his ideals. This is nature's "spur to progress." And when the common illusions of life cease to be realities for man, he may bid good-bye to happiness and begin to suspect that the life of the race is on the wane. Viewing the facts "fairly and frankly," it appears that man is not "really the nobly rational and finely spiritual being which he is ever prone to picture himself." For the concrete man is more irrational than the animals; is wicked for the pure pleasure of it; slaughters for the mere lust and sport of killing; brutalizes himself by drink; drugs himself into stupefaction; makes of himself a glutton; and gratifies immoderately the lusts of the flesh. As such, the individual man presents no very pleasing spectacle. In fact, the single life has small value. It may at any moment be sacrificed for nature's good, that is, for the good of the social organism. Subordinates slain in battle are readily replaced. And the life of the commander "who wins a great victory and saves an empire" is "worth more than the lives of the thousands slain."

With all this in mind, it is not difficult to see what view Maudsley must take of the *social* man of whom a certain *conduct* is demanded. With self-love as the basis of every being, and self-interest as the fundamental motive of conduct, and with the counter claims of society pressing upon him, man's moral problem becomes that of finding "the just mean between his personal rights and the duty-claims of the society to which he belongs — to reconcile individuality with solidarity, egoism with altruism." "To walk warily in the mean is true wisdom of conduct." Nature has made man neither angel nor brute, but something between the two. To incline overmuch towards either works therefore to his injury. Society, too, has its ideals. Indeed, conscience is only the social voice speaking through the individual. And seeing what society demands and approves, man is led into hypocrisies, lies, and affectations. These have their values. They express the recognition of an ideal, and by his very feigning to be what he is not, man is helped towards that which he would seem

to be. The ends of the social organism demand also that the weak and wretched — "the impracticables" — be eliminated from its midst, though no drastic measures for so doing are suggested. The best interests of 'nature' require, accordingly, a course of conduct far removed from that demanded by ideals of brotherly love and its attendant self-sacrifices. Even devil's work is sometimes needed. "There are times and circumstances when what the world wants is not the good man who is meek, modest, and tenderly scrupulous, but the strong man who is coarse, bold, and fiercely unscrupulous." He is the only one who in properly violent manner can expel the accumulated corruptions which from time to time threaten the social life.

To the calm and dispassionate view of a Maudsley, therefore, life's happenings are right only when, in nature's mechanical way, they contribute to nature's betterment. For this reason, man's hopes and aspirations and beliefs may be commended unhesitatingly — though with half a smile of pity for deluded mortals — because, though mere fatuous illusions after all, they are spurs to conduct which make mightily for nature's advantage. All standards and values are set by the organism. When, therefore, the function of the individual life has been fulfilled in the service of the organism, the time for its end has come. Death is the close of the drama. The hopes and terrors of the beyond are but phases of man's illusions. His hopes are but "the natural cry of individual egoism," which may find soothing cheer in the reflection that his works, good or ill, will live eternally in their human effects. Belief in a personal immortality, baseless illusion as it is, is but an expression of the self-conservative instinct — "the instinct of organic life, while it is in being, to continue to be."

If these reflections prove disheartening, have religion or philosophy their soothing consolations? Hardly consolations. For religion, which to Maudsley is "morality infused with elemental feeling and suffused with awe," is directed towards such a cheerless unknowable — the unfathomable, mysterious immensity around one — that little help can come from it. In fact, the sole function of religion is to "impel the process of humanization on earth," the cessation of such impulsion, the dying of the illusions in the cherishing of which man is inspired to live and strive, being entirely conceivable, and the thought being near at hand that when these die the race of mortals may pass away also. Philosophy, however, may step in and do much service. Not, indeed, a speculative philosophy, which joys in magniloquence because its "turgid verbosities afford the ease of ample discharge to turmoil of feeling," but that sound practical wisdom which faces the

situation fairly and frankly, and, with the pugnacious confidence of an abounding vitality, resolves to play the game well and without grumbling, striving always to make of life a work of art, and remembering that not he who knows most and thinks most is happiest, but rather he that *lives* most. The prosaic conclusion of good sense is, we are told, "that as everybody has to play the part set for him by nature and circumstances in a drama of mixed tragedy and comedy, of which he neither knows the beginning nor can foresee the end, and has done with it and is himself done with when his part is played, he ought not to take himself and the business too seriously, but should make up his mind quietly to act it to the best of his ability with all the goodwill and good humor he can command. Bad humor or overmuch self-consciousness will only fret and hurt himself and spoil the play," as will also too much insistence upon austere duty and that unbalanced view which regards ideals as patterns to which actual conduct may conform.

To criticize the underlying philosophy of this book is not the purpose of this review. Such criticism would itself be largely the expression of another system of philosophic opinion. Nor can any review pretend to do adequate justice to the many-sided aspects of the author's reflections, to the vigor and incisiveness of his thought and statement, and to his unflinching utterance of the truth as he sees it. As a thoroughgoing and consistent application of the naturalistic point of view to the manifold facts of life, the volume is to be heartily welcomed and commended. Every one who loves to reflect upon life should dip into its pages. The cynically inclined will find there much to please him, the cut-and-dried idealist will be irritrated at every turn, and only he who does no thinking at all will remain cold and untouched.

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Development and Evolution. By JAMES MARK BALDWIN. New York, The Macmillan Company, 1902.—pp. xvi, 395.

The theory of evolution enjoys the unique distinction of being at once the most important and the most ambiguous of modern scientific hypotheses. To doubt that slow ancestral evolution is in some way responsible for the various forms of organic life which we see about us, has long been to put oneself outside the pale of conventional scientific respectability. But when the interested inquirer seeks for some precise account of the manner in which organisms undergo modifications in their structure, and much more when he attempts to ascertain the

exact mode in which heredity operates, he finds himself confronted with a perfect jungle of divergent opinion. Recent biological writing on these subjects has served to clarify the issues at stake, but the household of organic science is still far from being at peace with itself.

The striking book before us affords an interesting and representative exposition of a tendency which has been regaining in scientific repute a position that for a generation past has often been denied it. Indeed, the extremer advocates of physico-chemical biology *et id omne genus* still view it with undisguised contempt. The tendency referred to involves the introduction of consciousness as a factor of fundamental moment in the explanation of genetic phenomena. So important is the rôle which Mr. Baldwin seems disposed to assign it, that it promises to furnish a means through which the most radical differences of Darwinian and Lamarckian may be converted into amicable harmony—provided, of course, that the Lamarckian is willing, for it must be confessed that he is harmonized largely by absorption, a process he may resent.

Moreover, Mr. Baldwin's book offers another significant exemplification of current biological conditions in its extensive drafts upon philosophy. To many a scientific man it must seem an evil day when the fair raiment of science is disfigured with the tawdry pretensions of metaphysics. For better or for worse, however, biology appears to be entering upon a period of fresh synthetic effort, and all thoroughgoing synthesis is doomed to a measure of invasion by the philosophy of its own day. We shall make the grounds of this fact clearer as it bears on the present case a little further on.

The cardinal tenet in Mr. Baldwin's evolutionary creed,—a creed which is largely shared, be it said, both in content and originality of formulation by Messrs. Lloyd Morgan and Osborn,—may be put thus: By a process of preservative individual accommodation involving consciousness, single organisms keep themselves alive in times of danger, and thus secure the accumulation in successive generations of the variations which they may chance to represent. In this way useful structures and functions, *e. g.*, instincts, gain time to mature, even though during the period of their development they may not have been useful. Through the destruction by natural selection of all harmful variations, the resulting effects would have at first sight all the appearance of a 'use-inheritance' origin of Lamarckian type, whereas, in point of fact, there may have been no real transmission of acquired characteristics at all. The important group of social and gregarious influences (imitation, tradition, etc.), by means of which

young creatures are guided by their elders, would also contribute to achieve the same outcome. The chief corollary of this principle is found in the theory of pleasure-pain factors acting upon the accommodatory movements of adaptation. Mr. Baldwin's formula runs somewhat as follows: Painful stimulations produce movements of retraction and restriction; pleasurable stimulations, on the other hand, occasion profuse expansive movements. Out of the matrix of overproduced movements brought about by pleasurable stimuli, the organism selects the particular co-ordinations relevant to the special situation to be met. These movements persist rather than others primarily because they are agreeable, and because all such reactions tend by virtue of the very constitution of the organism to reinstate themselves, so long as they are agreeable.

Stated in its most general form, 'organic' selection, as Mr. Baldwin calls his active principle, appears to offer an exceedingly sensible and plausible account of one stage in the operation of natural selection. It thus becomes a subordinate chapter in the whole statement of evolutionary process from the natural selection point of view. It contains a more precise description of the early stages in the acquirement of modifications (ontogenetic) and variations (phylogenetic, congenital) than had before been clearly articulated. For those who accept the genuineness of sexual selection, organic selection must constitute a similar but more general category, inasmuch as it involves consciousness in *all* of its directions of expression, whereas sexual selection involves only *one* of its modes of activity. Such a theory seems almost truistic once it is propounded, and yet it is undoubtedly of conspicuous value in unifying the discrepant forms of interpretation advanced by different biologists for certain groups of facts. To the Lamarckian who bases his faith either upon alleged instances of inheritance of acquired characteristics, or upon the asserted impossibility of explaining by the destructive action of natural selection the evolution of structures and functions which were useless up to the time of their complete development, the theory offers an alternative hypothesis showing how the semblance of transmission of acquired characters may arise from the cumulation of modifications in organisms whose adaptive reactions enabled them to live and beget offspring during the period in which these modifications (originally useless, perhaps) were becoming established. To the Darwinian, on the other hand, who has been wont to lay all the stress upon the controling influence of natural selection in weeding out the unfit, such a theory invites a redistribution of emphasis, by exhibiting the primary

value of individual adaptations, through which many variations may have become permanent that otherwise would have been ruthlessly stamped out. When phrased in this way, it is hard to conceive that any serious criticism should be directed against the hypothesis, save by those who wish to couch the whole series of developmental and evolutionary processes in totally different terms, *e. g.*, physico-chemical reactions. To such persons natural selection is itself an abomination. There is, however, one phase of the theory to which further attention should be directed.

All is clear sailing so long as one contents oneself with the mere statement that organisms do in some manner accommodate themselves to the rigors of their peculiar environments, thus succeeding in surviving and secondarily succeeding in assisting the crystallization of useful variations. Such a statement is, like that of natural selection itself, simply a formulation of the general method by which certain results have been attained; not an analytical apportionment of causal responsibility to specific factors in the process. But when one introduces consciousness into one's explanatory system explicitly to account for the execution of accommodatory movements, and especially when one attempts to sketch the details of the operation in terms of pleasure-pain phenomena, the dangers of scientific and philosophic shipwreck are immensely enhanced. Needless to say, Mr. Baldwin is thoroughly alive to this danger. He faces it without flinching, and his position deserves notice. It may be remarked in passing, that the whole range of evolutionary processes in plant life falls outside the limits of such a formulation as that of our author, unless one adopts the precarious hypothesis that plants are conscious.

Mr. Baldwin is what may be styled a 'scientific parallelist' (if he will pardon this gratuitous distribution of titles) and a 'philosophic monist' of the 'double aspect theory' variety. By which is meant that he accords to both the psychical and the physiological series of events in an organism the possibility—and for certain scientific purposes the necessity—of separate treatment. He would evidently countenance the validity of the mechanical categories in the physical series, so far as one might be consulting the interests of exact science. In the psychical series, however, another type of category holds sway. When he comes to such a question as that raised by the evolutionary hypothesis, *i. e.*, How has the psychophysical organism come to be what it is? he passes on to his monistic position, in which he maintains that neither the psychical nor the physical phase of our organic entity can be neglected to the cost of the other, and that the categories

appropriate to the one cannot be set up as absolute to the prejudice of those appropriate to the other. As a philosophic point of view, this position has, of course, an honorable ancestry. But there have always been carping critics who have insisted that the standpoint simply represented an attempt in philosophic speculation to run with the hare and course with the hounds. The question here, therefore, is as to the relevancy of this criticism, which clearly has an important bearing on Mr. Baldwin's point of view. If the theory of organic selection requires even occasionally the assistance of consciousness to make it work, one is at once confronted with the task of showing how consciousness succeeds in producing causal changes in the physical world of muscles; for if it does not produce such changes, it is evidently futile to cite it at all in connection with explanations supposedly based upon physical causation. That Mr. Baldwin does not mean to blink the issue is shown by the following words: "The fact of accommodation requires on the part of the individual organism something equivalent to what we call consciousness in ourselves" (p. 121).

Now I do not understand that, in his setting forth of the case, Mr. Baldwin means to go further than the utterance of a hope that somehow or other a point of view may be worked out in accordance with which it shall be found tenable to countenance in a vital way the immediate implications of the deliverances of consciousness, concerning the reality of the control which our minds exercise over our movements, and at the same time to adhere without shuffling to the conclusions of physical science in its treatment of causal and mechanical relations,as these bear upon the operations of the neuro-muscular processes. At all events, he says in one place: "And it is the problem of the metaphysics of experience to find the broader category, the final principle of experience as a whole, both objective and subjective. This I do not care to discuss," etc., etc. (pp. 130, 131).

Apparently, then, the recognition that consciousness plays an important part in organic evolution must for the present remain a relatively unilluminating postulate. For it can only be efficient for some large view in which are harmoniously included the rights of both the mechanical and the non-mechanical categories. Until biologists are ready to write the history of evolution in the terms of this larger view (*e. g.*, the "æsthonomic idealism" of a recent article by Mr. Baldwin) instead of in those of the natural science and causation view, all references to efficient factors of the conscious kind must inevitably involve contradiction. One cannot, of course, impute to Mr. Baldwin respon-

sibility for this situation, but it certainly constitutes a serious limitation of the significance for contemporary biology of his formulation of organic selection. The rank and file of biologists insist on attempting to find their real explanations in the physiological series of events where *physical* causation presumptively holds sole sway. This may indicate a narrow and unphilosophic provincialism of mind on their part, but it is at present the uncontrovertible fact, a fact rendered more conspicuous by an occasional illustrious exception. For example, one learned American biologist has recently said that "consciousness stands in immediate causal relation with physiological processes."

Psychologists have for a long time consciously faced this difficulty, but it does not appear to have taken an important place among the puzzles of biological theory until very recently. It is not to the reviewer's mind at all obvious that the difficulty need be raised, so far as concerns the value of organic selection. Let it be granted that in some way (frankly we do not know just how, Mr. Baldwin nor the rest of us) organisms do make accommodatory movements, which serve to tide them over times of environmental menace, until useful modifications have become firmly established. Let it be also admitted that consciousness is in some manner concerned in these operations. The effort to determine its exact place may well be postponed until "æsthonomic idealism," or some other equally mellifluous 'ism,' is generally accepted as cosmic theory. In the interim we shall be just as far ahead for all essential purposes of scientific theory, and we shall have been spared much needless wrangling. Moreover, even on Mr. Baldwin's own showing, "æsthonomic idealism" does not for a moment exonerate us from the necessity of finding the physiological counterparts of the conscious processes concerned in the selection of adaptive movements.

When one comes to Mr. Baldwin's account of the mode in which pleasure and pain influence the selection of movements, one opens up a more purely psychological question than those previously adverted to, and one which has already been treated in a similar manner in the author's preceding works. The formula baldly stated is this: Pain, depression, cessation of movements; pleasure, expansion, profusion of movements; selection and continuation of useful reactions. To my mind there are probably essential fallacies in this position, despite the wide endorsement among psychologists of several of the premises upon which it rests. In the first place, there is an erroneous estimate of the motor values attaching respectively to pleasure and pain psychoses. Pain is by no means to be described merely in terms of depression and constriction. A view which does this cannot rest upon ordinary

introspection, but must look for its support to the alleged effect of pain upon the circulatory and respiratory movements, and upon the tonus of the voluntary muscles under certain experimental conditions. These conditions are by no means immediately comparable with normal circumstances. One of the first and most persistent effects of pain is a violent motor overflow, directed, it is true, to escape from the stimulus, but resulting none the less on that account in the production of movements which may readily furnish a basis for subsequent useful coördinations of protection and flight. Surely the singed cat that dreads the fire has acquired a useful coördination from excess movements that were not called out by any thrills of pleasure. Moreover, the unpleasantness connected with effortful activity seems to be given scant justice in such a statement as that which Mr. Baldwin propounds. Indeed, the theory is classic, even if not popular, which looks to pain as the prime mover in human affairs. On the other hand, pleasure is by no means the invariable antecedent of overproduced movements. Many pleasures are distinctly narcotizing in their immediate effects. In Mr. Baldwin's statements about pleasure and pain, there appears to be a confusion between the *ultimate* effects of these psychical elements upon motor power, and their *immediate* effects upon the profusion of movements which they occasion. Though it should be admitted that all pain is at once followed by depressed vitality, and all pleasure by increased vitality, it would not necessarily follow, and, indeed, it is not true, that all pain produces immediate decrease of movement and all pleasure increase. The contrary is surely much the more frequent and more immediate result, and it is the immediate consequences which are of crucial importance in leading to the establishment of useful reactions. It will be seen that I call in question simply the *modus operandi* of pleasure and pain in Mr. Baldwin's description. The importance of the affective factors I do not doubt, but his analysis of their operation seems to me precisely to invert certain relations.

A final point which requires notice, and to which the last chapter of Mr. Baldwin's book is devoted, is the development of a theory of genetic modes, a heading under which the author indulges his readers in a dash through wide fields of metaphysics. The problem treated is an old one; but Mr. Baldwin, as is his wont, has touched it in an extremely fresh and suggestive manner, and it is sincerely to be hoped that he will at an early date elaborate it more fully. As it stands now, the doctrine is somewhat puzzling both to expounder and critic. One hesitates to put it briefly lest one distort it. Nevertheless, acknow-

ledging this risk, a few sentences must be given to it. Negatively, it is a vigorous protest against the unwarranted advocacy of the purely mechanical and chemical categories as complete and adequate media for the explanation and appreciation of vital phenomena. It is also a protest, eminently sane in its contentions, against the loose and inaccurate extensions of analogy from one stage to another of life processes, save when an examination of each series concerned may have shown the analogy just. Positively, the theory assigns to "agenetic science" the securing of exact quantitative formulæ descriptive of phenomena in convertible propositions. Thus, $A = B$, and $B = A$. In all truly genetic science, on the other hand, descriptive formulæ are never reversible. The product of any genetic series at any stage of its development always contains something unique which was not previously in the series. The author says: "Genetically $A = B$, but it does not follow that $B = A$" (p. 303). Again, "that series of events only is truly genetic which can not be constructed before it has happened, and which cannot be exhausted by reading backwards after it has happened" (p. 311). "In the life processes there seems to be a real genetic series, an irreversible series. Each stage exhibits a new form of organization" (p. 330). From Mr. Baldwin's point of view, history as well as biology is a genetic science. One cannot employ exact science for prediction (even theoretically), but after historical events have occurred they should, according to our author, be capable of formulation in the terms of exact science.

So far as Mr. Baldwin is attempting to curb the overweening pride of the prophets of a physico-chemical philosophy of life, he will find sympathizers in plenty. Whether the method which he proposes can finally be accepted, it will hardly be possible to say until the doctrine is more fully developed. Take, for example, his expressions about reversibility. If the irreversibility of vital phenomena refers to the mere conceivability of a given order, then the contention is obviously false. If it refers to causal relations of any kind, then it is true of all series, inorganic as well as organic, and the distinction becomes useless. Mr. Baldwin will have to make his peace with Kant, Royce, and others for the liberties he takes—as I understand him—with irreversibility. Moreover, it is not clear in what sense a genetic series produces results which are *unique* in any way which is not equally true of inorganic processes. Surely the distinction here is not so obviously one of uniqueness in the product, as it is one resting upon the degree of our ability to control the producing factors. If we once know what the series of fission processes are by which a cell divides, we are just as

sure how the divisions will occur under given conditions, as we are that $H_2 + O$ will give water. We have to find out both facts experientially to start with, and both are novel then and never so again. However all this may be, Mr. Baldwin's pronunciamento will, in its negative aspects at least, undoubtedly have a salutary influence upon the discussions at present going forward.

It has now been sufficiently illustrated what was meant by saying at the outset that a synthetic era in biology must necessarily involve a measure of philosophy. Biologists find, in bringing together all the lines of evidence bearing upon evolution, the great synthetic hypothesis, that they must define the scope of the principles with which they work, *e. g.*, causation, mechanism, teleology, etc. The problems of heredity, variation, selection, and the like, inevitably involve these categories. Moreover, consciousness must at least be recognized, and so the psychologist is called in and given respectful attention. Mr. Baldwin's book is an admirable example of this convergence of scientific and philosophic interests, and the biologist must acknowledge his obligation for the forceful way in which these matters outside his own sphere have been laid before him.

Of the nineteen chapters in the present volume, eleven are reprints, with more or less of change, from articles previously published. In addition to the seven new chapters, in which the most important material deals with psychology and its relations to biology, including the chapter on genetic modes, Mr. Baldwin submits in appendices a list of admirable discussions upon organic selection and its near relatives by Osborn, Lloyd Morgan, Poulton, Headley, Conn, and himself.

Although the book inevitably suffers somewhat from its mode of construction, it is nevertheless, in the reviewer's opinion, much the most lucid and vigorous of the series to which it belongs. Despite a certain measure of repetition, there are almost none of the annoying cross references to the author's other works of which reviewers of his previous books have so often complained. One may think the argument good, bad, or indifferent; but at all events it is straightforward and ready to rest upon its own merits. The shortcoming which the lay reader most often feels, is the lack of richer illustrative material. In its place one finds a strong disposition to "logical disquisition," as Mr. Baldwin calls it, when criticising Romanes for a similar sin. Such a defect is, perhaps, unavoidable when a scientist steps outside his own specialty, and it should be said in fairness that Mr. Baldwin makes no pretense of biological proficiency. Taken together, *Mental Development, Social and Ethical Interpretations*, and *Development*

and Evolution constitute a masterly exposition of genetic processes which will long remain a starting point for future explorers.

JAMES ROWLAND ANGELL.

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The Life, Unpublished Letters, and Philosophical Regimen of Anthony, Earl of Shaftesbury (Author of the 'Characteristics'). Edited by BENJAMIN RAND. London, Swan Sonnenschein & Co.; New York, The Macmillan Co., 1900.—pp. xxxi, 535.

In his 'Prefatory Introduction,' the editor gives due credit for the idea of the present volume. He refers to the remark made by Professor Fowler, at the beginning of his well-known book on Shaftesbury and Hutcheson ('English Philosophers' Series), that the Shaftesbury Papers, now deposited in the Record Office at London, would well repay a more careful investigation than he was able to give them in the preparation of his own book, which was written for a popular series. As a result, we have a thick, well-printed volume, consisting of a sketch of the philosopher's life by his son, the Fourth Earl of Shaftesbury, of the unpublished letters, and of a philosophical work, hitherto unpublished, to which the editor has given the not wholly fortunate name *Philosophical Regimen*.

Of the material thus brought together, the life is perhaps the least unfamiliar, since its contents were mainly printed by Thomas Birch in the *General Dictionary* (1734–41) of Bayle, without due acknowledgment of their source, though apparently by permission. "But," as the editor characteristically remarks, "this is the first time for the Life to be published under the name of its real author, and with the exception of a necessary change in the order of paragraphs to conform with known events, almost precisely as it exists in the original manuscript. . . . Its publication here affords in a compact and narrative form the various events in his career necessary to be known by the reader in order to obtain a clear and ready understanding of the contents of the letters which immediately follow in the work" (pp. v, vi). It is only fair to remark that the editor's task seems to have been performed mere efficiently, on the whole, than this and other bungling statements would lead one to expect, though certain cases of editorial carelessness are not difficult to detect. For example, the first and second paragraphs of the Life, as here printed, would be rather confusing to a reader who had not been prepared by the editor himself, in such statements as the above, to do his share of the editorial work. The first paragraph begins: "The following sketch of my

father's life was once intended to have been prefixed to the new edition of the *Characteristics*, though upon considering further on it that thought was laid aside." The second paragraph begins: "I hope I need not make any apology for prefixing the following relation of my father's life to this edition of the *Characteristics*." There is no note explaining the discrepancy, but it would hardly take an exponent of the 'higher criticism' to supply one.

As already indicated, one division of the book (the third) consists of the more important unpublished letters of Shaftesbury. The editor points out that these begin in 1689, when the philosopher was eighteen years of age, and continue for the most part "with desirable regularity" until the time of his death in 1713. As biographical material, therefore, they are of undoubted value, though the personality of the writer was hardly such as to make them greatly interesting as mere letters, and though they can hardly be said to reveal any new phase of the philosopher's character. At the same time, if it were necessary to prove that Shaftesbury's praise of virtue in his published works was more than literary or academic, passages like the following to the head steward of his estate at St. Giles would be conclusive. "If my estate cannot, besides my house and rank, yield me five or six hundred pounds a year to do good with (as that rank requires), my house and rank may both go together . . . for I shall never think of supporting them, since I have not wherewithal to do it and that which is more necessary" (pp. 316–317). In truth, while the letters are by no means wholly free from the artificial style which detracts somewhat from the effectiveness of Shaftesbury's published works, they are nevertheless in the deeper sense genuine throughout, and form an inspiring record of the noble life of one who, in spite of physical infirmity, did much to show what a 'working aristocracy' might really achieve.

The second division of the book, about equal in length to that devoted to the letters, consists of the unpublished work, called by the editor *Philosophical Regimen*, which can hardly be regarded as a fortunate translation of the author's title, *Ἀσκήματα*. Dr. Rand says: "The manuscript material of this portion is to be found in two notebooks among the Shaftsbury Papers of the London Record Office. The earliest writing in these books is dated Holland, 1698, and the latest, Naples, 1712. Their contents thus cover almost the entire period of the author's literary activity, but center chiefly, however, about his two 'retreats' into Holland, the one in 1698 and the other in 1703–4." It is natural that the editor of a hitherto unpublished

work by so important a moralist as Shaftesbury should claim a good deal for its importance as a permanent contribution to Ethics. Dr. Rand says: "Although the philosophy of Shaftesbury is . . . founded on stoicism, this Philosophical Regimen is a new and brilliant presentation of that moral system. The discourses of Epictetus were uttered, it is believed, extempore. They have popular form, but often lack in continuity of expression. The thoughts of Marcus Aurelius, on the other hand, were written down merely for personal use. They have the evidence of private honesty, but are stated in short paragraphs which are often obscure. The merits rather than the defects of these two works are combined in the *Philosophical Regimen* of Shaftesbury. . . . The Greek slave, the Roman emperor, and the English nobleman must abide the three great exponents of stoicial philosophy."

To the present writer it seems that this statement involves a serious misapprehension, both as to the nature and importance of this work of Shaftesbury, and as to the true position of Shaftesbury himself in the development of modern ethics. There is no question, of course, that Shaftesbury was indebted for many of his ideas to the Greek moralists, but he was far too catholic in his general attitude toward the problems of ethics to learn from one school only. In the *Philosophical Regimen* (with its thirty-four brief chapters, on such subjects as "Natural Affection," "Good and Ill," "Reputation," "Character," etc.), he was undoubtedly attempting to formulate principles for the conduct of life after the stoical method, even to the extent of closely imitating Epictetus and Marcus Aurelius. But though the English nobleman may have aspired to become a reincarnation of the Greek sage, one does not have to read far in order to find that the present work is an imitation and not a creation. It is essentially exotic, and not an important continuation and development of stoicism. It is principally interesting because Shaftesbury wrote it, and not because it is a real contribution to ethics. One cannot at all agree with Dr. Rand, when he says that it "embodies a philosophy which must compel a renewed and critical study from the stoical standpoint of [the] *Characteristics*." These reflections upon the 'wisdom of life' throw very little light upon Shaftesbury's own system. Far from being a Greek philosopher born out of his time, he was perhaps the most modern moralist of his generation. He was the first English philosopher to develop clearly the view that human nature is a system, and that virtue consists in the harmony of the affections and in the development and realization of man's social and ideal self. Butler,

of course, later developed this method much further, whatever may have been his direct obligations to Shaftesbury, and from Butler we shall doubtless continue to learn, though so much of what we consider most modern in ethical speculation may be traced back to the greatest of English moralists.

But however we may differ from the editor in our estimate of the *Philosophical Regimen* and in our view of the position of Shaftesbury in the history of English Ethics, all students of philosophy must be grateful to Dr. Rand for the considerable labor involved in editing so much new material from the Shaftesbury Papers, and to the publishers for bringing out the volume in such attractive form.

ERNEST ALBEE.

SUMMARIES OF ARTICLES.

[ABBREVIATIONS.—*Am. J. Ps.* = *American Journal of Psychology*; *Ar. f. G. Ph.* = *Archiv für Geschichte der Philosophie*; *Int. J. E.* = *International Journal of Ethics*; *Phil. Stud.* = *Philosophische Studien*; *Rev. Ph.* = *Revue Philosophique*; *R. I. d. Fil.* = *Rivista Italiana di Filosofia*; *V. f. w. Ph.* = *Vierteljahrsschrift für wissenschaftliche Philosophie*; *Z. f. Ph.* = *Zeitschrift für Philosophie und philosophische Kritik*; *Z. f. Ps. u. Phys. d. Sinn.* = *Zeitschrift für Psychologie und Physiologie der Sinnesorgane*; *Phil. Jahr.* = *Philosophisches Jahrbuch*; *Rev. de Mét.* = *Revue de Métaphysique et de Morale*; *Ar. f. sys. Ph.* = *Archiv für systematische Philosophie*.—Other titles are self-explanatory.]

LOGIC AND METAPHYSICS.

Introduction à la métaphysique. H. BERGSON. Rev. de Mét., XI, 1, pp. 1–36.

Metaphysical definitions show that there are two profoundly different ways of knowing a thing. One depends upon symbols and is relative, the other is independent of symbols and may become absolute. Intuition is the kind of intellectual sympathy by which we are carried into the interior of an object so that we coincide with its unique and inexpressible character. Analysis, on the contrary, refers the object to elements which are already known, that is, which the object has in common with other objects. Analysis multiplies without ceasing the points of view, in order to complete a representation which nevertheless remains incomplete; but intuition is a simple act. The positive sciences aim at analysis, metaphysics professes to go beyond symbols. We know by intuition only the self in its flow through time. Besides perceptions, memories, and tendencies, we have a self which is at once a variety of qualities, a continuity of progress, and a unity of direction, and which cannot be represented. The intuition may be suggested by properly selected images, but it cannot be expressed in conceptual representations. Unity and multiplicity give an external view; but, whether separated or united, they cannot penetrate to the duration of the self. Science, by analyzing, substitutes for the self psychological facts which are elements but not parts. We need not hope to construct that self by operations with its symbolical elements. This has been the error of both false empiricism and rationalism. The first attempts to find the self in the interstices of psychological states; the second, as the place of those states. In the former case, the self approximates toward zero; in the latter case, toward infinity. A true empiricism will seek for the real nature of the unity, multiplicity, and reality of the self. While practical thought tries to know, not for the sake of knowing, but to satisfy an interest, *i. e.*, goes from concepts to things, a real metaphysic inverts the process and passes from things to concepts. To determine where intuition ends

and analysis begins, we must look to the self, to the flowing of that which endures. Psychological elements are static, the parts of the self are variable. Analysis deals with the unchanging, intuition refers to the moving. In the attempt to conceive spatial movement in terms of fixed positions, we find an example of the limit of analysis. But to think that philosophy is confined to the contemplation of the self is to misunderstand the nature of the self. While the logical ideas of unity and multiplicity reduce concrete reality to an abstraction, the intuition of our own duration places us in touch with a continuity of durations. There is an external reality given directly to our minds, and that reality is mobility or tendency. Modern science began when Galileo resolved to study movement in itself, instead of searching the principle involved in the concepts high and low. Modern philosophy also has had the feeling of the moving continuity of reality ; but forgetting sometimes, *e, g.*, in Kant, that an essential characteristic of metaphysics is freedom from symbols, it has driven metaphysics and science to the extreme limit of symbolism. The Kantian criticism does not apply to philosophical doctrines in so far as they are intuitional. Intuition is nothing mysterious ; every one exercises it to a certain extent. Metaphysical intuition, however, is only possible after a thorough acquaintance with philosophical concepts, and, to take the particular case in hand, an adequate intuition of the self must be consecutive to a great number of psychological analyses. N. E. TRUMAN.

A Compendious Classification of the Sciences. T. WHITTAKER. Mind, 45, pp. 21–35.

In order to complete systematically Comte's classification of the sciences — arranged in the order : Mathematics, astronomy, physics, chemistry, biology, sociology, morality — several corrections are first necessary. Astronomy is too concrete to belong to the fundamental series ; animal psychology, instead of being a subdivision of biology, deserves a separate place ; and human psychology, substituted for morality, better expresses Comte's meaning. Again, formal and material logic must be inserted before mathematics, and metaphysics after the higher psychology. This amended list is best represented diagrammatically in the form of a circle, rather than a straight line. For metaphysics — speculatively, if not didactically — precedes logic ; and both these extremes are subjective. The determinations of this series are consequent one upon another. Epistemology furnishes the confirmation of the laws of thought, whose availability is absolutely dependent upon the existence of an order of which they by themselves contain no assertion. Material logic provides the (essentially synthetic) principles peculiar to mathematics. Upon intuitive construction, but never upon mere analysis of concepts, recognition of the truth of a mathematical proposition results from a single act of comparison. With the fact of nature's uniformity once proclaimed in the laws of conservation and causation, physical science becomes possible. To-day rationalism

and experientialism almost approach unanimity in their mutual concessions regarding the subjective grounds of this uniformity. According to the incontestable portion of Kant's mathematical doctrine, mechanics must be separated from mathematics and made the foundation of physics. For the idea of a moving mass, fundamental in rational mechanics, is non-essential in connection with pure mathematical assumptions, which can be treated as merely spatial and numerical determinations. Since the actual qualitative differences between phenomena cannot be annulled by showing that they are accompanied by modified arrangements of simple particles, physics can never supplant chemistry. Both are involved yet transcended in biology, whose problem deals with the 'immanent end' or consensus of functions manifested by living organisms. Animal psychology, introducing the method of introspection, treats of mental synthesis in general previous to the formation of the concept. Combining the results of the two preceding sciences, sociology advances to a study of the relation between organisms that live in community and become capable of intellectual converse. Finally, human psychology, through its investigations of emotion, will, and thought, leads directly to ethics, practical philosophy, and metaphysics. Comte's classification is exceedingly valuable in that it shows clearly how the sciences, in their ideal order, form a single organism of knowledge to which each is subservient.

ANNIE D. MONTGOMERY.

The Absolute as Unknowable. A. K. ROGERS. Mind, 45, pp. 35–47.

This paper considers Mr. Bradley's substitution of a purely hypothetical synthesis for the neo-Hegelian identification of reality with thought or knowledge. Not only, it is objected, is life more than thought, but thought does not in itself supply an intelligible unity. It indicates but never reaches such a unity, since it involves a separation of the *what*, or idea, from the *that*, or existence. Accordingly, (1) thought is not absolute because essentially relational, and (2) the true absolute is, for us, unknowable. To this latter statement, and also to the subsequent postulate of a single inclusive experience as the ultimate unity, Mr. Rogers takes exception. The facts of experience, as *we* feel them, must either be denied, or taken as only *known by*, not existing in, the final experience. To prove the possibility of knowing reality, and at the same time to offer an adequate explanation of the nature of the absolute, it is only necessary to show that in knowledge, as such, is implied the separate factual existence of the thing known, distinct from the experience of knowing. An object is not revealed to us by the actual presence of a part of it in our momentary feeling. This feeling is, indeed, the instrument of knowledge, but has no part in the meaning of the judgment passed. Anything new which is ascertained about a familiar thing appears, in the *process of discovery*, as a unique relation which must be added to the reality previously known; but, as a matter of fact, we realize that the actual and completed thing existed

non-discursively prior to any judgment whatever. That is, sensations, perceptions, and feelings are duplicates, not integral parts, of experienced, extraneous objects. Now the true meaning which reality has for us is its relation to our own activities. Recognition of the end of action, and this alone, unites the whole act, and so whatever object enters into it, and thus saves the object from being regarded as a mere relational series. The thesis maintained is, accordingly, that in any conscious act of a non-discursive kind, our experience, while falling short of, nevertheless typifies, absolute experience. In this supposition of a cosmic unity of purpose, is found an explanatory monistic principle. My act is not lost or transformed in an eternal, all-engulfing consciousness, but is vitally connected with this consciousness by virtue of being known as a part of the universal purpose, albeit as itself and nothing else. ANNIE D. MONTGOMERY.

The Problem of Natural Religion. JOSIAH ROYCE. International Quarterly, VII, 1, pp. 85–107.

The problem of natural religion is that of the possibility of attaining religious truth by appeal to the light of nature, unaided by revelation. The problem arises out of the apparent opposition between ideals and facts. Facts are objective, concrete somethings which, of their own nature, determine whether a given statement about them is or is not true. Ideals are subjective, and bear no determinate relation to the world of facts. An ideal is an idea that, from our point of view as believers in this ideal, *ought to be* a fact. Our religious consciousness looks for a realization of our ideals. Is there, then, a Being who is able and willing to give ideals determinate expression in the realm of facts, and whom we have a right to regard as himself a fact? The question is to be answered by examining the reasonableness of the physical world, *i. e.*, facts. Are these facts the embodiment of ideals, and do they present a sufficient agreement with ideal purpose to prove that some Being exists whose will they express? Modern scientific tendencies seem to oppose an ideal interpretation of nature. In earlier centuries, the orderliness of nature was regarded as a positive manifestation of divine purposes and designs. Kant, however, pointed out the invalidity of the claims of natural theology. Following Kant, came an active idealistic movement, which, in turn, as science advanced, gave way to more critical tendencies. The knowable was now the fact world as manifested in human experience; our insight was concerned solely with phenomena, never with ultimate truths. But is it true that our empirical acquaintance with the physical world is still too narrow and fragmentary to give us power to prove anything regarding the presence of ideals in or behind the world of facts? The search for law, the scientific construction of coherent systems out of the seeming chaos of raw experience, seem but to illustrate how, after all, the ideal may lie beneath the fact world. As Kant said, our human experience contains no ultimate facts. No man hath seen God; no man hath seen a single real, perfectly determinate fact.

Our very conception of a world of determinate facts is one of ideals. The fact, for our finite experience, is the ideal. Yet it does not follow that the facts of the universe lie beyond all experience, both human and non-human. The search for facts is a search for more definite experience. The search for the ideal is a search for a complete expression of some conscious process. The state of consciousness wherein all questions are determinately answered remains for us an ideal object of search. To say that the ideal is actually realized, and that such realization constitutes the very nature of the true universe, is to assert that there is, then, a consciousness for which all questions are answered. Now such a consciousness is a mind to which all reality, natural and spiritual, is present in a perfectly determinate and individual form. For any inquiring consciousness, facts remain ideal objects, sought but not yet fully found, limited in experience, and approached as one's experience becomes more determinate. To assert that such ideals are expressed in the real world, is to assert that the real world is present to a determinate and real experience. Such an experience has at least the character of divine omniscience, and has reality as its own present object. Moreover, in order to possess value as a determinate fact, an experience must embody an intention, must fulfil the purposes of a will. Mere presence in experience does not make the content determinate. Will is necessary to determine and give individuality to facts. The absolute will confirms or defeats finite ideals. The facts of the Absolute exist by virtue of its own absolute Will.

C. A. HEBB.

The Present Attitude of Reflective Thought towards Religion. HENRY JONES. The Hibbert Journal, I, 2, pp. 228–252.

Taking 'reason' in its ordinary sense, as equivalent to 'the intelligence,' we may say no age has employed reason more, nor trusted it less, than our own. We find the conflict between theory and practice hottest around the principles of our moral and religious life. Hence an intellectual skepticism has arisen through a failure to justify the faith that serves as a foundation for our practice. Now, to-day, it is said, we tend to overrate the rôle played by reason in human affairs. Reason is rather destructive than constructive. Even truth is esteemed too highly; it is merely a means and not an end. However, over against this condemnation of the philosopher, the popular instinct persists in placing the solid worth of our growing knowledge, especially in science. In this respect, we may say the present day is not skeptical. It is rather in the province of religion that the intellectual diffidence of to-day arises. Even here, however, we find a despair of a theory of morals and religion, rather than a skepticism. If men have tired of the official theology of the past, we still find them listening with reverence to the spiritual message of the poet. The very fact that poets dwell on these themes, and find God immanent in His world, proves that our times are not skeptical in spirit. Looking, too, at the works of the

present age, we find practical religion everywhere. The distrust rather lies with dry theology and speculative formulæ. What, now, are the consequences of this skepticism of intellect? One cannot compromise, and believe that religion is rational even though unintelligible. Hence we find both extremes; those who hold to religion, and those to whom the first concern is intellectual. Most men, however, halt short of these extremes. In looking over the general disposition of to-day, it will be seen that the present attitude of thought towards religion is essentially transitory. Neither side will allow compromise; each tendency is too fundamental and deep-rooted in the life of to-day. There was, however, introduced in the last century a new method of contemplating the facts in the natural world, and this has brought about a restatement of the whole problem of man's spiritual nature. Science has become cosmocentric, and, in this way, man has been despoiled of his uniqueness. The fact that man is what he is only in virtue of his ontological relation to the world, cannot now be questioned. Man is vitally united to his fellowmen in a rational society, and deep-rooted in the outward world of facts. The old conception of isolation was the basis of much of the religious conviction of the past. It is in this respect, therefore, that the problem of the ethical and religious life has become crucial in our day. Now all this would seem to point to the decay of religion and the undisputed rule of naturalism; but such a conclusion is intellectually false. If man's religious and moral interests have deepened *pari passu* with his intellectual growth, there is at least a possibility that it is not religion and reason themselves which are in conflict, but rather the theories of them, offered by the speculative thinker. Experience is not rent in twain. What we need is a better view of religion and a more sympathetic attitude of reason. R. B. WAUGH.

HISTORY OF PHILOSOPHY.

The Place and Worth of Oriental Philosophy. JAMES LINDSAY. A. f. G. Ph., IX, 3, pp. 393–398.

The writer of this article is chiefly concerned with entering a protest against the general neglect of oriental speculation, from which he believes the occidental world has much to learn. In support of his contention, he instances certain ethical and philosophico-religious ideas of the Hindus, Egyptians, Persians, and Chinese, and while he does not assume any historical dependence of European speculation on the Orient, he insists that philosophy has a "more universal note to strike than the European one," that "woven of one warp and woof throughout as is the universe of thought, not without Asiatic philosophy can it be made perfect." W. A. H.

Die Schilderung der Unterwelt in Platons Phaidon. OTTO BAENSCH. A. f. G. Ph., IX, 2, pp. 189–203.

In this article an attempt is made to give a detailed explanation of the closing myth in Plato's *Phædo*. The topography of Tartarus is exhibited

in diagrams and maps which interpret with the greatest possible distinctness Plato's conception of the nether world, and of the destiny of departed souls. In the light of this topography, the writer subjects the Greek text to criticism and revises Aristotle's *Meteorology*, II, 2 (in order to harmonize it with the Platonic account of the *Phædo*) by striking out *οἷον εἰ ῥεῖν ἤρξαντο κάτωθεν, ἀνωθεν εἰσβάλλειν*, which Baensch regards as an early gloss.

W. A. H.

The Ethical Philosophy of Marcus Aurelius. JAMES LINDSAY. A. f. G. Ph., IX, 2, pp. 252–258.

No attempt is made in this article to put into systematic form the disconnected paragraphs of the "Meditations," but a clear enumeration of the chief ethical ideas is given — ideas which, as Lindsay says, "made the Emperor the important connecting link between pagan and Christian thought."

W. A. H.

Die Entstehung der Philosophie Descartes nach seiner Korrespondenz. W. PFEFFER. A. f. G. Ph., IX, 1, pp. 1–26.

Pfeffer points out that the most important information regarding the development of the Cartesian philosophy is found in the *Discours* and the *Letters*. The main series of the latter begin with the year 1629. In the spring of 1629 Descartes retired to Holland, carrying out a resolution he had formed towards the end of 1628 to leave Paris and find solitude for the working out of his "new philosophy." On April 16, 1629, he was registered at the little University of Franeker in North Holland. At this time his correspondence shows that he was engaged on the metaphysics, for on April 15, 1630, he wrote Mersenne: "Les 9 premiers mois que j'ai été en ce pays je n'ai travaillé à autre chose (*sc.* qu'à la métaphysique)." Further, on November 25, 1630, he wrote Mersenne: "I do not say that I shall not some day complete a *petit traité de métaphysique* [published under the title: *Meditationes*] which I began when I was in Franeker." Further, about the end of July he became interested through Reneri in the observations of the Jesuit Scheiner on the Parhelia, which drew him away from his metaphysical studies, and in October and November of 1629 he was in active correspondence with the optician Ferrier, of Paris, on the questions of dioptrics and mechanics. By the end of 1629 he had already formed the plan of his work on physics, which he hoped to complete in three years, as he announced in April of 1630, and by November, 1630, he had chosen the title *Le monde*. In January, 1632, he sent the first part of his Dioptrics to Golius, Professor of mathematics at Leyden. News of the condemnation of Galilei (July 22, 1633) reached Descartes in November, 1633, at a time when he was in a mood of indecision about his work *Le monde*, and about the end of the year he determined not to publish it. His motto became: "Bene vixit, bene qui latuit." In the summer of 1635, he announced to Mersenne that he had separated the Dioptrics from

his treatise *Le monde* and was disposed to publish the former. In November, 1635, he had decided to add to the Dioptrics another chapter of the *Le monde*, the Météores, and to write a preface. The preface developed into the *Discours de la méthode*, and was completed by March, 1636. To the Dioptrics and Météores was added the Géometrie. These three treatises, which followed the *Discours de la méthode*, were later entitled "Essais de cette méthode." The four were published anonymously in 1637 at Leyden. In 1638 the publication of *Le monde* was definitely abandoned, and Descartes turned his attention to medicine. The article discusses the correspondence to 1638, and in a postscript is added an inquiry into the amount of time spent on metaphysical problems in 1629, in which Pfeffer attempts to show that the figure 9 in the letter of April 15, 1630, should be amended to read 4. This would make the work on the metaphysics extend to the end of July, 1629, and would reconcile the letters of October 8, 1629, November 13, 1629, and April 15, 1630.

W. A. H.

Ueber Aufgabe und Methode in den Beweisen der Analogien der Erfahrung in Kant's Kr. d. r. V. ERNST VON ASTER. A. f. G. Ph., IX, 2, pp. 218–251; IX, 3, pp. 334–366.

In these two articles on problem and method in the proofs of the analogies of experience in the *Kr. d. r. V.*, von Aster states the general problem of epistemology in the Kantian philosophy and then examines its solution under the following rubrics: (1) Synthetic judgments *a priori* as an epistemological question; (2) Kant's solution of the question in reference to mathematical propositions; (3) the logical necessity of the fundamental propositons of the pure understanding in the *Kr. d. r. V.*; (4) conditions of the knowledge of reality; (5) the Transcendental Æsthetic as basis of the proof of the analogies [forms of pure perception]; (6) knowledge of reality and experience; (7) the notion of object [supplementary defence of the foregoing in reference to the thing-in-itself]; (8) deduction of the notion of the pure understanding and proofs of the analogies; (9) proofs of the separate analogies of experience. The purpose of the articles is to show how the proofs of the analogies depend on the Transcendental Æsthetic and Analytic. From the major premise: "The objects of experience are in space and time," the following conclusions are drawn: (1) A persistent substance underlies the objects of experience; (2) the objects, in so far as they occupy a point in time or are events in time, are subject to the law of causality; in so far as they are simultaneous, they are subject to the law of reciprocal action.

W. A. H.

PSYCHOLOGY.

Fortsetzung der 'psychologischen Streitpunkte.' IV. Zur Frage der geometrisch-optischen Täuschungen. V. Zur Psychologie der 'Annahmen.' THEODOR LIPPS. Z. f. Ps. u. Phys. d. Sinn., XXXI, 1, pp. 47–79.

In the 19th volume of the *Z. f. Ps. u. Phys. d. Sinn.*, Witasek showed, supposedly, that every theory which bases its explanation of geometrical-optical illusions on illusions of judgment was false. Lipps's theory is of this sort. Witasek's argument rested partly on epistemological considerations, and partly on experimental evidence. Benussi, in the 29th volume of the same journal, has furnished additional experimental evidence for the refutation of L.'s theory. In the present paper, L. replies to both the epistemological and experimental objections. Some geometrical illusions are illusions of form, some of direction. What, then, are direction and form? But first, What is a line? W. answers that a line is *seen*. L. says that it is not seen; all that is seen is one's visual field; the line is contained in it implicitly; it becomes explicit by an act of apperception. Nor is straightness seen; it is a mark of the apperceived line, and it depends on the judgment of the relation of the line to right and left. Since W. and B. considered only illusions of direction, the question now becomes, What is direction? or, more particularly, What are verticality, horizontality, and obliquity? W. says that verticality comes from the impressions occupying a certain position on the retina. L. answers this, saying that he may move his head until the impressions of a vertical line fall on the same place on the retina as those of an oblique line, although the line still appears vertical. L.'s answer to the whole question of direction is that, as straightness depends on relations to a right and a left, so verticality, horizonality, and obliquity depend on an absolute right and left, an above and below, with reference to one's body. The straightness and direction of a line, therefore, cannot be given in perception; but judgments of relation are necessary. L. now puts his own construction on three experiments which W. and B. directed against his theory. If a horizontal line is crossed by an oblique line at an angle of 45°, it stands in equilibrium between horizontality and verticality. The question for the geometrical illusions is: Does the oblique line appear to tend toward the vertical or horizontal position? It apparently tends toward the vertical, because its obliquity consists in crossing the horizontal. For L. the crossing of the lines is the crucial point in the explanation of the Zöllner illusions. (1) Let a vertical line be crossed by one that is slightly oblique, but the obliquity of which is not sufficient to throw doubt on the verticality of the principal line. If this line be placed on a mirror, its image appears crossed in the opposite direction by the oblique line, and the two lines, real and image, appear crooked. L. explains this illusion on the ground that the reversal of direction of the

oblique line in the image emphasizes the obliquity of the crossing lines, hence the apparent deviation from the vertical. (2) In the second experiment, the principal line and the oblique are brought together by means of the stereoscope. The fusion of the two fields is not complete and the illusion does not appear. L. explains the failure of the illusion as due to the indistinctness of the crossing of the lines. (3) The third experiment is that brightness differences between the background and the lines enhances the illusion. L. interprets this experiment to mean that any condition which renders the crossing of the lines conspicuous, consequently enhances the illusion. H. C. STEVENS.

A Study of the Relations between Mental Activity and the Circulation of the Blood. FREDERICK G. BONSER. Psych. Rev., X, 2, pp. 120–139.

The purpose of this paper is stated by the author as threefold. (1) To determine the changes in circulation during pleasant and unpleasant affective states under conditions of mental activity and fatigue. (2) To determine the correlation of the processes of intellection with changes in circulation. (3) To determine the relation of Traube-Hering waves to fluctuations of attention. The stimuli for the affective and intellectual states were odors, and mathematical problems and memorization, respectively. Changes in circulation were recorded by an air plethysmograph and by a sphygmograph. In the case of affective reactions, the author found that all stimuli, whether pleasant or unpleasant, gave constriction either immediately or after a slight dilation of the blood vessels. The results, in the case of intellectual reactions, were vaso-dilation invariably preceding vaso-constriction, and acceleration of heart-beat during the period of vaso-dilation. Prolonged intellectual activity lessened the amplitude of the pulse and increased blood pressure. The Traube-Hering waves correspond in length to the visual and auditory attention waves. The crest of the attention wave, however, corresponds with the trough of the vaso-motor wave.

H. C. STEVENS.

Direct Control of the Retinal Field: Report on Three Cases. GEORGE TRUMBULL LADD. Psych. Rev., X, 2, pp. 139–150.

The writer states his problem in the following sentence: "Can the sensations customarily called 'retinal,' which arise with the eyes closed and motionless, be made to respond to volition with respect to the form and color which they assume?" Experiments were made by sixteen students. Of these, four reported no success, nine were partially successful, and three were wholly successful. Of the three latter, two were able to vary both form and color at will; the other observer was able to control the color of the image, but did not report on the form. The most common form was the circle; but this might be changed to an ellipse, triangle, or cross. On the basis of these observations, L. concludes: (1) That the control of the form and color of visual images which appear in the closed eye grows by

practice. (2) That the phenomenon cannot be completely explained by selective attention. (3) That the strain of the eye muscles cannot account for the appearances. (4) That the colors and shapes of visual images are more centrally determined than has hitherto been supposed. (5) That these facts furnish evidence for the active, directive, and discriminating side of consciousness. H. C. STEVENS.

Sur la mémoire affective. F. PAULHAN. Rev. Ph., XXVII, 12, pp. 545–569; XXVIII, 1, pp. 42–70.

It is possible to include in affective memory all the modifications which have been left in the mind by affective phenomena. But the present investigation is not to consider effects so completely systematized that they produce no emotion, nor is it to consider effects which have been so little systematized that they are lost. Purely intellectual memory of emotional states is also to be left out of the present discussion. This article deals with memory which recalls affective facts with their affective character. The statements of Rousseau, Restif de la Bretonne, and Taine prove the reality of affective memory. Some deny that the emotion which accompanies the idea of a previous affective state is a real revival. The partisans of affective memory say that affections are revived in the same sense that ideas are revived. Mauxion distinguishes false from true affective memory. In the latter, the revival of the emotion is not preceded by the revival of images which explain it. We cannot make this distinction absolute. Memory should not be contrasted with reconstruction but with organization. When well systematized by the mind, affective or intellectual phenomena appear to us as the result of spontaneous activity of the self. The greater part of our opinion and knowledge is not considered as memory, but is completely united with our mental life. Thus the feeling of affection, when thinking of a friend, seems to be the natural reaction of the mind, and is not regarded as the return of an earlier emotion. True affective memories are feelings which are no longer systematized with an actual self. When an opinion or a feeling separates from our mental organization, and associates itself again with the elements it discarded when it entered that organization, we have, in the one case, intellectual, and in the other case, affective memory. We need not demand in proof of affective memory a case where intellectual phenomena do not accompany or precede affective phenomena. Each class of phenomena influences the other, and both classes are signs which reveal a more profound reality to consciousness. All memory involves both intellectual and affective elements, but there are many instances in which the latter are dominant. The ideal of memory is an exact reproduction of past reality, but fortunately it is not attained. Affective memory varies both in intensity and in purity, and these attributes mutually influence each other. One observer finds that the memory of agreeable emotions grows gradually feebler but rarely entirely fades away, while the memory of disagreeable emotions grows stronger, reaches a maximum, then finally

disappears. The lack of purity in emotion depends upon the complexity of circumstances. Memory tends to inhibit the discordant elements. Systematic association and inhibition are the principles which explain the increased intensity of feeling and the decreased intensity of the memory image. Affective memory may or may not provoke a hostile reaction. It is often transformed by actual dispositions. Involuntary occurrence is no proof of its fidelity to the past reality; disparity with the present emotional life is an indication of accuracy. Progressive transformation into the mental organization constitutes the chief utility of memory. But the unorganized affective memory has a practical use. By its cultivation we subordinate to our will portions of the mental life that are too independent, since the individual character of the emotion is destroyed by a reflective recall. Association by contiguity is a valuable means of securing a desired emotion. Affective memory has its dangers; it may stimulate too much the independence of the psychical elements. Turning to sociology, we find analogies of affective memory, *e. g.*, renaissances and anniversaries. Affective memory also plays a part in history and in art.

G. W. T. WHITNEY.

The Affective Quality of Auditory Rhythm in its Relation to Objective Forms. R. MACDOUGALL. Psych. Rev., X, 1, pp. 15–36.

The objective factors upon which the character and intensity of the pleasure in a rhythmical sequence depend, may be summed up under the following heads. (1) 'The objective rate and intensity of succession among the elements of the rhythmical sequence.' The character of the pleasureable impression varies with every change of rate of succession; but it cannot be said that the agreeable impression increases or decreases as the speed rises or falls, though certain elementary factors of it do so. Slow and simple rhythms may be preferred to the more rapid and complex. The influence of absolute rate can be interpreted only in connection with other simultaneous variants. (2) 'The absolute intensity of these constituent elements (whether auditory or reactionary).' Intensive variations are less significantly related to the æsthetic impression produced by the rhythm than are changes in absolute rate. In extreme ranges of intensity, the effect is most marked. (3) 'The relation of the absolute rate to the prevailing emotional mood of the moment.' The *tempo* must be congruous with the normal rate and intensity of the motor discharge of the subject at the time, in order to be pleasing. It is the naked quality of the rhythm which is momentarily pleasing or displeasing, not that of the associations brought to mind. The capacity of the rhythm to please depends on the relation of the attention needed to apprehend it, to our stock of vigor at the moment. (4) 'The number of elements of which the rhythmical unit is composed.' Increase in the number of such elements makes the sequence gay, light, etc.; decrease in the number renders it solemn or noble, but the simplicity or complexity of the rhythmical structure must be coördinated with this

number. The position and intensive relations of accentuation are also important. Dipodic structures are sprightlier than simple sequences, short and common meters than long meter. (5) 'The structural complexity of the rhythmic unit as dependent upon the differentiation of its components.' The satisfaction afforded by the rhythmical sequence depends upon a process of individualization that penetrates every part of its structure and gives to each element a functional uniqueness. This differentiation marks the temporal, as well as the intensive, aspects of the series. It cannot be observed by introspection, but its presence imparts character to the rhythm. (6) 'The proportion of the various temporal and intensive values within the rhythmical unit.' These differentiations are not made at random, but must be in definite proportion to produce pleasure. Three factors are involved in this proportion: intensity, duration, and position, with their interrelations. The author has proved by experiment that æsthetically agreeable rhythmical forms are characterized by non-uniformity in the values of their constituent intervals. Those types are preferred in which the interval following the accented element exceeds that which follows the unaccented. The appreciation of forms in which this relation is reversed shows more irregularity. (7) 'The form of succession which the elements of the unit group presents.' This form is of fundamental importance. We cannot read a series in reverse order and get the same æsthetic effect as in the correct reading. The author describes this fact as due to the melodic relations of a series of strain experiences. Each note is dependent upon the preceding and succeeding tones for its æsthetic quality. Further, the two series of values, intensive and temporal, influence each other at every point. (8 and 9) 'The temporal and intensive differentiation of successive groups and their combination into higher rhythmical unities.' The unbroken series of a typical figure is monotonous, and there is a strong tendency to vary such a succession by the creation of larger figures. This is shown by the author's experiments. Two secondary factors of æsthetic pleasure enter as inseparable elements into every concrete experience of rhythm, viz., musical quality and capacity for arousing secondary associations. Delight is increased by the richness and purity of tones, by their functional connection with other tones in a melody, and by the combination of tones in harmonies. The forms of secondary association are emotional and intellectual. The emotions aroused are not sensuous, but are evoked through the ideas awakened by the melody. The intellectual side is seen in poetry. The formal perfection of the rhythm is constantly broken by the demands of the laws of logical arrangement.

R. B. WAUGH.

NOTICES OF NEW BOOKS.

An Essay on Laughter: Its Forms, Its Causes, Its Development, and Its Value. By JAMES SULLY. London, Longmans, Green & Co., 1902. — pp. xvi, 441.

Many of the topics considered in this substantial volume have found treatment elsewhere. The bodily characteristics of laughter have been repeatedly enumerated in the discussions of physiological processes and emotional expression. The varieties of the laughable call for analysis in every theory of the ludicrous. The development of laughter in the child has been traced and retraced in books on mental growth. The essence of humor, wit, and satire has been debated by a host of writers on æsthetics and literature. But though many acute observations have been made concerning its origin and connections, the discussion of laughter in such cases has been incidental to a larger group of relations, and it has received necessarily fragmentary treatment. Here, for the first time, as the author points out, an attempt has been made to illuminate the whole field by treating the phenomenon of laughter as an independent object of inquiry, in which its relations to the whole complex of human activities and feelings shall be explored and brought together in a single view. Only as a result of such a presentation can an intelligent comprehension of the nature of laughter and its function in human evolution arise.

The plan of the work is well conceived. Its topic is logically developed in a series of chapters among which one does not recall the omission of any important aspect of laughter. Though the divisions of the book are numbered consecutively, its contents may be conceived under two general heads: an enquiry into the nature of laughter, and an estimation of its value.

The first part comprises three broad topics: first, the physical conditions and associates of laughter; second, the nature of its objects, with a criticism of theories concerning its mental antecedents; and third, the evolution of laughter in the individual and the race, supplemented by a discussion of the appearance of its rudiments in subhuman species. After pointing out the continuity of the processes of smiling and laughter, and their relation to general conditions of feeling, the author distinguishes the latter into two classes roughly describable as quasi-reflex and joyous. The former arises under conditions of embarrassment, fear, pain, and other forms of mental tension, and may be extended to include the characteristic reaction to tickling; the latter is either the free expression of a happy mood or the response to a specific excitation. These widely differentiated experiences are ingeniously united under the concept of a sudden release from restraint occasioning, at least temporarily, a joyous relation.

As to theories of the laughable, the standpoints of both Hobbes and

Kant are subjected to destructive criticism. The occasions of laughter cannot be reduced either to a perception of degradation in the object, or to the nullification of expectation and the apprehension of incongruity in the relations presented. The union of these principles, as in the 'descending incongruity' of Spencer, is equally inadequate as a formula for all varieties of the laughable. The most promising way of bringing together the manifold qualities embraced by the ludicrous, our author holds, is to regard them as all presenting some harmless departure from accepted standards. Laughter arises from the pleasurable shock which comes with the sudden upsetting of our ideals in ways which do not arouse disgust or pain.

The method of exposition observed by Mr. Sully, in interpolating his discussion of the theoretical aspects of laughter in the midst of an historical treatment of the subject, is justified when, in the following chapters, he returns to the question of development, since, with a systematic tracing of the evolution of laughter in the child and the race, it is now possible to combine an interpretation of its successive phases in the light of the principles already laid down.

The value of laughter is two-fold, individual and social. For the individual, apart from the complex vital reaction whereby it heightens the efficiency of a variety of physiological processes and furthers the physical well-being of its possessor, the peculiar value of laughter consists in the fact that it is an indefeasible æsthetic good, whose simple existence is its sufficient justification. When it appears in its spontaneity, it is the perfect bloom of a happy mind, the purest expression of which is found in the frank, infectious laughter of children. A more specialized aspect of value is presented in the social and moralistic function of laughter, which involves a large preceding development in the range and variety of the objects of laughter and parallels the whole complex process of human social evolution.

Among the contributions which Mr. Sully's book makes to our understanding of the place of laughter, the most important, in the reviewer's opinion, is contained in the discussion of laughter in social evolution. In the course of this chapter, the author points out the manifold ways in which this function has served the cause of progress. Choral laughter unifies those who participate in it, to laugh together is to promote good-fellowship. It also tends to consolidation by throwing into relief those common interests, traditions, and ideals of the family or tribe which differ from the customs and aims of other groups, as when the laugh is turned against a foreigner.

Laughter corrects errant tendencies within the group by bringing extravagances into derision. It moulds the character of the individual by dissuading him from minor unsocial habits, and, in things of greater importance, by quickening reflection and strengthening the will. In all these social relations, laughter is a mild yet searching test of the genuineness and value of a multitude of individual variations and social innovations. This

function is especially conspicuous in reference to claims of superiority by classes or individuals, since the searching out of all weaknesses and subjecting of them to the irony of laughter by other and inferior groups purges the object of unworthy and offensive traits, and assists in maintaining a high standard of excellence.

Not only in class distinctions and individual dignity is ridicule a potent factor in preserving worthy ideals of character and life, but in the empire of ideas as well it plays its part. New intellectual conceptions and novel social practice are tried in the crucible of laughter, and society is thereby preserved from the rash adoption of untested customs. The new mode must have sufficient vitality to survive ridicule, if it is to be finally adopted as part of the people's possessions. Among the lesser functions of laughter is that of a social mollifier. It relieves restraint and sets men at their ease; it takes the edge off personal and professional antagonisms; it socializes and enlivens the discussion of serious problems.

As the differences between individuals and groups become more complex and subtle, laughter, while retaining its fundamental social functions, undergoes a parallel development in modulation and refinement. This progressive modification which is observed in the history of peoples leads to the consideration of the ultimate function of laughter in human society, and, in closing, the author, in a spirit admirably tempered by caution, ventures upon an indication of its probable place in future social evolution. The decline of choral laughter is part of a larger change involving the disappearance of a full abandonment to the mood of play; but, with this quieting of rude and boisterous mirth, the lash of satire has been eased and men have been drawn together through the growth of a tolerant humor which has enriched their appreciation of life with many new tones of quiet laughter.

Much in the book that is of interest or importance, for example, the analysis of comedy and humor, must necessarily be overlooked in this short note. The work is eminently readable, and is marked by a sustained reasonableness of view. The range of the author's reading is indicated by the two hundred and odd names which appear in the index appended to the book. Mr. Sully has a happy faculty for quotable characterizations which linger pleasantly in the memory, from which I take the following phrases: "The joy of living leaps to a higher plane and bursts into a peal of mirth"; "Laughter is the manna on which good fellowship loves to feed"; [Humor is] "laughter sobered by a word of wisdom"; "A sympathy of a step too quick for the sense of fun to keep abreast in friendly comradeship will . . . make an end of laughter"; "It is this playful shimmer of a light thrown by an entertaining idea on the surface of a misfortune which rids it of the worst of its gloom"; "Pure and honest laughter, like mercy, blesses him that gives, and him that takes."

ROBERT MACDOUGALL.

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Fragments in Philosophy and Science: being Collected Essays and Addresses. By JAMES MARK BALDWIN. New York, Charles Scribner's Sons, 1902. — pp. xii, 389.

Few readers of Professor Baldwin's formal volumes, even of those who aim to keep up with current periodical literature in psychology and philosophy, realize the great number of minor articles which he has published in the last decade and a half. The present volume, which consists of a selection only of these fugitive articles, cannot fail to impress one with the extent, variety, and richness of the writer's philosophical work. The twenty-five papers which are here brought together have all with one exception been printed before. Scattered through ten journals and over a period of fifteen years, however, they were largely inaccessible. The future historian a generation or two hence, who writes of the philosophy of the present age, will find in this volume no small aid in tracing the development of Professor Baldwin's philosophic thought.

Several of the essays present in embryonic form ideas that play a prominent part in his most important works. This is notably the case with the article on "Imitation: a Chapter in the Natural History of Consciousness" (pp. 168–209). This article was first published in 1894 in *Mind*, and is the seed thought of the author's *Mental Development*, and, to some extent also, of his *Social and Ethical Interpretations*. Other articles serve as interpreters of some characteristic theory of the author's larger works, either by answering criticisms or by criticising opposing views of others. In this way the articles on "The Perception of Reality" (p. 232), and on "Feeling, Belief, and Judgment" (p. 239), aid in the exposition of the doctrine of reality, feeling, and belief in the *Handbook of Psychology*. Indeed, it is the fact of the relation which these papers bear to the topics of his larger works which, the author tells us in the preface, has served as a principle of selection and also as a prominent reason for the publication of the collection.

Besides this interpretative function, the work has another, an introductory function. "The group of philosophical essays are introductory to a developed view of the world" (p. vii). This statement of the writer himself justifies us in looking for a certain unity of thought in the collection, and for intimations, at least, of the general philosophy by which, it is to be hoped, Professor Baldwin in the fullness of time will crown his labors in special fields.

The first paper is an explicit statement of the author's general attitude towards philosophy. Before all else philosophy is pronounced a vital discipline. Its problems are the problems of human life. The world-problem — what, whence, why, and whither the world — the problem of knowledge, its validity and its extent — all these problems of the philosopher are questions that inevitably emerge in actual life. The answers too are vital. They are not mere speculative fancies. For weal or for woe they deter-

mine concrete courses of conduct, *e. g.*, one's attitude toward society and its institutions. But not only has philosophy to do with vital problems, not only are its answers determinants of real life, but the legitimate test of the truth or falsity of its teaching is its effect on life. There is no extended discussion of this view, either in this essay or in any of the others in the present volume. The following passage, however, indicates the chief ground on which the author would base the defense of this practical test of truth. "Why should not all facts of mind be as valid as any facts of nature? . . . Biological evolution is based upon a principle whereby needs arise where satisfactions are, and where satisfactions are not found, there no need is; the economist develops the social organism on the same principle, that supply does not precede but always accompanies demand. Yet what treatment does the man receive at the hands of contemporary science who claims that an ethical demand is sufficient proof of its own normal satisfaction, and that mental intimations of immortality afford presumptive evidence of a future life? Yet the man of science knows that such inner experiences are facts," etc. (p. 11).

Seekers after a spiritual view of the world have been prone to argue from the moral and religious needs of man to a realm of spirit, a spiritual world which is the counterpart of the spiritual man. The tendency of such minds has been either consciously or unconsciously to condemn the natural world in their seeking of the spiritual. The significant thing, it seems to me, in the present-day revival of this argument, is that it is made by men who have been trained in the natural sciences, and are as keenly alive to the reality of the natural world and the validity of the sciences which deal with it, as they are to the importance and value of the spiritual world. Such preëminently is the case with Professor Baldwin.

This brings us to a second prominent feature of his world view — the sovereignty of science in the natural realm. Nature here includes, of course, mind as well as matter. Psychology, therefore, is to be pursued with as unswerving loyalty to scientific principles as is physics. "Comparative and experimental psychology are the direct outgrowths of the modern scientific spirit, and it is to the merit of contemporary philosophy that the new work is receiving its hearty endorsement. . . . I speak here with the conviction arrived at through earnest study in the laboratory and with the physicist, and with the caution which is born of a realization of unsettled problems, and I say that neurological and psychophysical research has done no hurt to an idealistic philosophy" (p. 17). It is one thing to accept science grudgingly as far as its results up to date are quite indubitable, and to look for evidence of the spiritual world in the gaps which science still leaves in the natural; it is quite another thing to recognize that all nature belongs to science, whether she has as yet made good her claim or not, and that the spiritual is to be found, not by denying any of the facts of nature to science, but by the interpretation and evaluation of the world of science in the light of man's highest ideals and aspirations. From the

latter point of view, there can be no conflict between science and philosophy. The complete naturalism of the one in no wise militates against the idealism of the other. Professor Baldwin not only urges this view explicitly, but what is more to the point, he lives up to it. In his various psychological studies there is no abandonment of scientific methods or conclusions because of any fear that they may conflict with his final idealistic interpretation of things.

An ultimate idealism may be noted as the third great feature of his world-view. This is not so much explicitly stated in his first essay as taken for granted. In fact, in no one of the papers do we find any extended exposition of his idealism, and yet it is present throughout as an essential part of his fundamental point of view. A few statements here and there, however, may be taken as indications of the kind of idealism toward which he is aiming.

The fourth essay, a brief criticism of "Professor Watson on Reality and Time," gives us the most information on this point. There the conviction is expressed "that it is only part of the realities which we get that are thought-constructions; many of them are *felt* realities. For example, does not ethical appreciation always run ahead of cognitive description? The æsthetic and other 'worths' of our system of realities are as such not objects of thought" (p. 68). In the next essay, "The Cosmic and The Moral," the real and ethical are found to constitute one and the same series, looked at in the one case retrospectively and in the other prospectively. In opposition to the view that there is no chance of reconciling the metaphysical real with any ethical interpretation of the same reality, he says: "Rather must reality, when viewed metaphysically, be both rigidly true and *also* divinely fair — so far as metaphysics may allow us to hold to either category as more than a device of human thinking." To this passage is appended the note: "This point embodies one of the essential approaches to the philosophy toward which the writer is now [1902] finding his personal views tending, and which sees in the *æsthetic* category, rather than in either that of truth or that of ethical worth, the real and final reconciliation" (p. 76). In the preface also we find another expression of this same faith in the supremacy of the æsthetic category. It is to be regretted that the book does not contain anywhere at least a tentative outline of the path by which the author hopes to reach that æsthetical idealism which is to be the reconciliation of the intellectual and the ethical. This is the only point, however, in which the book fails to realize the expectations awakened by the preface.

Besides the above indications of Professor Baldwin's general world-view, the book contains some suggestions as to his philosophy of morals and his philosophy of religion. The essay on "Imitation" may be regarded as a psychological prolegomenon to the former, and the one on "The Psychology of Religion" to the latter. The genesis of the religious consciousness is explained after the same manner as that of the ethical. The development

of the personal self carries with it the progressive construction of the 'other' person. The God-person is the ideal 'other'—the necessary correlate of the ideal self. Thus religion is "a function of the personal development which is also social; and an adequate theory of the rise of personal self-consciousness accounts *ipso facto* also for the religious life. The impulse to read self into others, *i. e.*, to recognize personality as more than individual, with its final development in the recognition of ideal personality —this is what, in my opinion, a genetic account of religion requires" (p. 328).

In the brief paper on "Theism and Immortality," we find an indication of the correlation between the author's metaphysics and his philosophy of religion. All realities, he holds, are forms of organized experience, necessary satisfactions of our nature's demands. "And that we need them and get them, that is their proof. That the external world is real means simply that it is an inevitable way that the mind has of organizing what it finds in that certain sphere of its experience which we call sense-perception. Truth is the sort of reality which we reach by an equally inexorable demand of our nature that we recognize what is logical. *And our ethical and religious life in organizing its experience reaches the reality which we call God.* God is the reality which our moral and spiritual nature needs and finds" (pp. 341–2).

Such, in outline, is the world-view to which this collection of essays is introductory. It was perhaps presumptuous to attempt to draw up such an outline. My only defense is, the preface tempted me! The volume is not even an architect's elevations, to say nothing of the finished structure. It is properly a gathering of the well-hewn psychological foundation-stones for a philosophical edifice. Clearly criticism of the architect is not yet in order. One question, however, persistently arises in the mind of the reader: Will the author in his finished structure avoid the idealist's fallacy? Will he avoid the assumption that the psychological genesis of our idea of reality is the account of reality itself? Reality may be only a construction of experience; my contention is simply that something more than the psychology of the idea is necessary to prove this. There are indications here that this pitfall lies in our author's pathway. Will he escape it?

F. C. FRENCH.

COLGATE UNIVERSITY.

Bibliothèque du Congrès International de Philosophie. IV. Histoire de la Philosophie. Paris, Librairie Armand Colin, 1902.—pp. 530.

It is clearly impossible, in the available space, to discuss in detail the eighteen essays that constitute the contents of this notable volume. I believe I shall best consult the interests of the readers of the REVIEW by adding a few remarks on selected chapters, after reproducing the titles of the studies therein contained: I. "Aim and Method in the History of Philosophy," by E. Boutroux. II. "Discourse on the Proper Method of

Studying the History of Philosophy and of Ascertaining the Truth in the Systems," by Paul Deussen. III. "On the Progress Disclosed in the History of Philosophy," by J. J. Gourd. IV. "The Conception of a Mathematical Physics among the Greek Philosophers from Pythagoras to Plato," by René Berthelot. V. "'Becoming' in the Philosophy of Plato," by Victor Brochard and Lionel Dauriac. VI. "On the Historical Evolution of the System of Plato," by Louis Couturat. VII. "On Plato's *Parmenides* in Relation to Aristotle's Criticism of the Theory of Ideas," by David G. Ritchie. VIII. "On the Concept Ἐνέργεια Ἀκινησίας," by F. C. S. Schiller. IX. "On the Principles of the Philosophy of Nature in Aristotle," by Paul Tannery. X. "Inductive Logic in the Epicurean School," by Georges Lyon. XI. "The Value of the Scholastics," by François Picavet. XII. "Physiological and Psychological Memory in the Philosophy of Descartes," by P. Landormy. XIII. "The Moral Principle in the System of Pierre Bayle," by J. Devolvé. XIV. "David Hume and the Critical Philosophy," by Henri Delacroix. XV. "On the Meaning of 'Experience' in the Philosophy of Kant," by Victor Delbos. XVI. "Swedish Philosophy in the First Half of the Nineteenth Century," by Reinhold Geijer. XVII. "The Conception and Method of the Philosophy of Science in the System of Auguste Comte," by Gustave Belot. XVIII. "The Philosophy of Nietzsche," by H. Vaihinger. It will be observed that the contributions are arranged chronologically, with the natural exception of those which relate to the scope and method of the discipline.

M. Boutroux quotes with approval the saying of Herder, "Einen Schriftsteller aus sich selbst zu erklären ist die honestas jedem honesto schuldig," and demands that the historian do not accept the direct influence which a thinker exerts upon subsequent philosophy as the sole standard of his significance. Professor Deussen distinguishes three factors in the thought of every great philosopher: the *individual, i. e.*, that which springs from the individuality of the man; the *traditional, i. e.*, that which gives direction to the thought, not only of the individual, but of the time; the *original, i. e.*, that element in a system which is unique and of lasting significance. Unfortunately Deussen does not disclose the relation of the original factor to the individual, and even less does he discover a sure criterion for the ascertainment of the original. It may be confidently affirmed that the specimens he gives of his method in the sketches of the original thought of Plato, Jesus, and Kant will satisfy few but their author. M. Gourd's interesting survey of the history of thought is too long to admit of brief characterization.

Mathematical physics, as conceived by M. Berthelot, is a much vaguer term than one might expect. It means virtually only the disposition of the philosopher to substitute the category of quantity for that of quality in the explanation of phenomena. In tracing this tendency in the successive systems, some light is indeed shed upon the problems that confronted the early Greek philosophers, but these problems are themselves so ab-

stractly formulated as well-nigh to lose their identity. One of M. Berthelot's most interesting suggestions is that which sets atoms into relation with the Pythagorean numbers. While it is wholly probable that there was historically a very intimate relation between the two conceptions, it is nearly certain that M. Berthelot misconceives the nature of those numbers. When Professor Diel's *Fragments of the Pre-Socratics* becomes available, the present excuse for such misconceptions will no longer exist.

Plato receives the well deserved homage of three studies. Of these, the essay on 'Becoming' is doubtless the most important. We are told in a footnote that it is a preprint from a history of Greek Philosophy which its authors have in preparation. We may well await the publication of the completed work with some impatience. Certain problems, *e.g.*, the identification of the four 'causes' of the *Philebus*, seem to be as far as ever from an accepted solution (*cf.* p. 121 with p. 159). M. Couturat essays to summarize and restate the results of the statistical studies of the Platonic dialogues, notably those of Campbell, Lutoslawski, and Natorp, in so far as they may shed light on the development of Plato's thought. His conclusions coincide generally with those of Lutoslawski. Professor Ritchie's essay on the *Parmenides*, which can scarcely be said appreciably to advance the solution of the problem, is a welcome evidence that this great masterpiece is receiving the renewed attention it so well deserves. Couturat and Ritchie agree with Lutoslawski that the *Parmenides* marks the turning-point in Plato's dialectic, corresponding to his efforts at mediation in the sphere of morals and politics, begun in the *Republic*, and completed in the *Philebus* and the *Laws*. The language in which this conclusion is stated by Couturat is strikingly like that in my essay entitled, "The Necessary and the Contingent in the Aristotelian System," 1896.

Mr. Schiller, in his contribution, resumes a subject already broached in the *Riddles of the Sphinx*. He interprets and justifies the Aristotelian doctrine of the ἐνέργεια ἀκινησίας, — the doctrine that the being of God, as of the supremely actual, does not undergo change. As a specimen of exposition and argument, the essay is perhaps the best in the volume. M. Tannery, in his study of Aristotle's scientific principles, makes the following profound observation, which, if properly appreciated, would necessitate the rewriting of almost all the books on the history of thought: "Generally the so-called principles are not the determining cause of the system; on the contrary, it is the system, already conceived in its general outlines, that — consciously or unconsciously — calls forth the principles; they are only a means to that end."

M. Lyon offers a careful study of the inductive logic of Epicurus, based upon the fragments of Philodemus's περὶ σημείων καὶ σημειώσεων. It is a welcome evidence, among others, that the narrow dogmatism has ceased to prevail, which regarded all post-Aristotelian logic as degenerate and valueless. M. Picavet presents both the claims made for the Scholastics and the criticisms urged against them, and strikes a just balance. In all prob-

ability there exists nobody better qualified than he to form and render an impartial judgment on the subject. I know of nothing to be compared with his essay in its own field.

Among the contributions relating to modern philosophers, Professor Vaihinger's exposition of the philosophy of Nietzsche easily ranks first, He enumerates seven tendencies apparent in the thought of Nietzsche. which he regards as most important. These he characterizes pointedly by the following terms, which are readily understood: *anti-moraliste, anti-socialiste, anti-démocratique, anti-féministe, anti-intellectualiste, anti-pessimiste, anti-religieuse.* These tendencies he essays to correlate by tracing the evolution of Nietzsche's thought. Vaihinger distinguishes three periods; first, that in which Nietzsche echoed Schopenhauer, accepting his doctrine of the will and his theory of art; second, that in which Nietzsche was strongly positivistic and intellectualistic; third, that in which Nietzsche returned to Schopenhauer's doctrine of the will, but abandoned his pessimism for an optimism based upon the acceptance of Darwinism. Vaihinger's position may best be stated in the words in which he has chosen to express his thesis: "The teaching of Nietzsche is that of Schopenhauer converted into a positive theory, and this transformation was accomplished under the influence of Darwinism."

In conclusion, it is right that we should say that the volume is a worthy memorial of a noteworthy congress. W. A. HEIDEL.

IOWA COLLEGE.

Constitution de l'éthique: quatrième essai sur la morale considérée comme sociologie élémentaire. Par E. DE ROBERTY. Paris, Félix Alcan, 1900. — pp. 223.

M. de Roberty gives us in this book a somewhat extended, if not labored, explanation of his views regarding the relation of ethics to the other spheres of intellectual pursuit likely to be considered in connection with it, viz., psychology, science in general, and philosophy. He complains of his intellectual relatives, the positivists, that they have been too narrow in their recognition of the products of intelligence to be considered. They acknowledge only one series of facts, the *scientific*, while M. de Roberty insists that we must recognize the important material found in philosophy, art, and industrial life as well as that afforded by science. They all four belong together, as contributing material of sociological or ethical value. They make what he calls the psycho-social series, and they stand in the following order of priority and interdependence: Science; philosophy (since the character of philosophic ideas is determined by the prevailing scientific ideas); art, which depends likewise on the preceding two; and industry, which depends on all three. These four constitute and determine all the facts of human society, and they thus give the fourfold content for ethics, which is identified with sociology. And this whole body of material is distinguished from the phenomena of biology and chemistry in that the

type of causality here operative is final, and not mechanical. 'Finality' is the distinctive work of superorganic phenomena, with which sociology deals.

Sociology is not to be confused with psychology, either individual or collective. M. de Roberty criticises the views of Hegel, Herbart, and Steinthal, because they made the mistake of deriving sociology from collective psychology, although this, he says, is better than deriving it from individual psychology. The fact is, individual psychology depends upon sociology. Individual mentality is but the outcome of the reciprocal action of living organisms already endowed socially. Sociality antecedes and produces both social groups and the individual qualified socially with rights. His theory of the *psychisme collectif* is just that sociality is a transformation of vital factors, by which a discrete aggregate becomes a new thing called a 'social group' characterized by 'continuity' in place of discreteness. It is the social whole which creates the individual mentally, and not *vice versa*.

Psychology is a concrete science which investigates the phenomena of mind. Sociology studies the laws or conditions of social existence; biology studies the laws or conditions of organic life. Psychology bases itself upon these two abstract inductive sciences, and gives us a concrete knowledge or ideology. To confound the concrete knowledge of psychology with either biology or sociology, which are both abstract, would be to repeat either the mistake of Comte and the positivist school, when they subordinated psychology as a chapter of cerebral physiology, or the mistake of Herbert Spencer and the evolutionist school, who made ethics a chapter of ideology (that which deals with moral ideas). Ethics, or sociology, is an abstract science of the whole field of superorganic facts.

The last chapters deal with the relation of sociology (ethics), religion, and philosophy, thus completing the program of showing the relation of philosophy to all the disciplines of the psycho-social series. The treatment here shows plainly the author's positivistic lineage, and is perhaps less suggestive than the previous parts of his book. W. B. LANE.

RANDOLPH MACON WOMAN'S COLLEGE.

Le idee fondamentali di Fed. Nietzsche. Per F. ORESTANO. Palermo, A. Reber, 1903.—pp. viii, 359.

Dr. Orestano's book, aside from its intrinsic merit, is interesting as a further evidence of academic vigor in the new Italy. We have here signs of scholarly acquaintance, not merely with a particular subject far removed, one might suppose, from the ordinary circle of Italian thought, but with a background of extensive literatures other than Italian and other than Romance. In the present work one may trace the influence of German method and of familiarity with Germanic criticism. The author has himself studied to advantage in Germany; and he seems to have followed, among others, the inspiring Danish critic Brandes in a considerable range

of reading. From the north he has assimilated much and well. Method and scope such as we often attribute to the Germans he adds to a pliant sympathy for his subject and a limpidity of language distinctively Italian.

Dr. Orestano's method is genetic, interpretative, and critical. The author aims to follow Nietzsche's fundamental ideas from their origin throughout their 'progressive development.' He desires to interpret them 'to the Italian public.' He wishes to separate for preservation what is more permanent and beneficial in Nietzsche from what is harmful or accidental. The plan of his book is excellent. After an introductory chapter of general exposition, with a sketch of Nietzsche's life and with useful notices of more weighty Nietzsche literature, he devotes the four succeeding parts of his treatment to four successive periods of Nietzsche's activity. He closes with a chapter of criticism.

In his introduction, Dr. Orestano seeks first to establish for Nietzsche a sort of double philosophical ancestry. The germ of Nietzsche's doctrine of the ultimate indifference of good and evil he discovers in Kierkegaard and certain Scandinavian followers. For example, he finds it well expressed in Ibsen's *Pretenders*, in a famous speech of Bishop Nicholas (Act I, Scene 2); a character and a speech, let us hasten to say, for whose sentiments Ibsen could scarcely be supposed to have a personal, or more than a creative artist's sympathy. Dr. Orestano hardly makes clear any direct influence of Scandinavian thought upon Nietzsche. Nietzsche's contention, on the other hand, for a free and harmonious development of the individual to his highest potentiality the author traces to the influence of Goethe and his cult.

In the development of Nietzsche's thought, Dr. Orestano marks out four periods. The first, 1869–76, extending from the inaugural dissertation at Basel, *Homer and Classical Philology*, to *Ill-timed Reflections*, shows the precocious young professor busied with two main problems, Hellenism and the question of German national culture. Space permits here the barest notice of this and the succeeding three chapters; we must refer the reader to the excellent paragraphs of summing up, in which Dr. Orestano, as he passes from point to point, crystallizes the essence of his various chapters and subdivisions.

The second period, 1876–79, comprises *Humanity too Human*, *Various Opinions and Proverbs*, and *The Wanderer and his Shade*; it displays Nietzsche seeking independence of thought, after his rupture with Wagner and Schopenhauer.

The third period, 1880–85, includes Nietzsche's publications from *Aurora* to *Thus Spake Zarathustra*. In it Nietzsche gives expression to his most characteristic ideas: men must become again part and parcel of nature; elevation of the human type can be founded only upon deeper-laid instincts; good and evil *per se* have no existence; the individual is paramount; the identical ever returns.

The fourth period comprises all the later works. In these Nietzsche

essays a systematic and final expression of his whole teaching. They are, consequently, ethical and apologetic; they include *Beyond the Realm of Good and Bad*, *The Will for Might an Attempt to Revalue all Values*, *The Wagner Affair*, *Twilight of the Idols*, and posthumous fragments.

In his fifth chapter, Dr. Orestano, after an appreciative notice, though not uncritical, of the conclusions in Vaihinger's *Nietzsche*, sums up as follows: "The theoretical basis of Nietzsche's teaching is in general slight, not seldom defective, extremely one-sided. Nietzsche's belief in the sovereignty of individual power excludes for him all other points of view. True and false, lawful and illegal, beautiful and repulsive have lost in his philosophy all generic distinction; power alone has right to create values, whether cognitive, moral, or æsthetic. No logical necessity lends Neitzsche such a privilege of intuition. With equal justice another philosopher might say that, not power, but, for example, love was the foundation of all human values" (p. 254). In this suggestion lies the key-note of Dr. Orestano's criticism.

Of permanent worth Dr. Orestano considers the following tenets of Nietzsche: (1) Life in its essence cannot be wrong; every ethics or religion that abjures life is false; (2) society is to be saved by its superior individuals. One might remark that these are no new teachings; Nietzsche has, however, revivified them in the glow of his unusual and burning genius (p. 355). Dr. Orestano's treatment may be characterized as at once sympathetic, just, and thorough, qualities that must commend it to every student of Nietzsche.

L. COOPER.

CORNELL UNIVERSITY.

Psychologie als Grundwissenschaft der Pädagogik: Ein Lehr- und Handbuch unter Mitwirkung von Seminardirektor Dr. K. HEILMANN, herausgegeben von Direktor Dr. M. JAHN. Dritte Auflage. Leipzig. Verlag der Dürr'schen Buchhandlung, 1901.—pp. x, 464.

Perhaps it is in the nature of things that attempts to apply psychology to the needs of the teacher should so generally be disappointing. The present volume has merits as a general introduction to psychology. It is simply and clearly, albeit somewhat monotonously written, and shows a sufficient acquaintance with the recent tendencies in psychology. It might easily have been shortened, however, by omitting references to various matters of controversy which are treated so briefly as hardly to be intelligible to the untrained student. As it is, the carrying away of a unified impression from the book is not altogether easy. From the pedagogical side, the chief criticism of the book is that its point of view does not seem really to be very enlightening. There is an attempt to work out a scheme of psychological development, in which the main feature is the separation between the lower stages, which follow the laws of psychical mechanism, and the higher apperceptive functions. The writer justifies this primarily on the ground of its practical values, but he fails to make apparent that it does

supply any really illuminating principle available for our practical guidance. His own applications are comparatively few, and are for the most part of the distressingly obvious sort. A somewhat extensive use is made of the results of child study.

A. K. ROGERS.

BUTLER COLLEGE.

An Introductory Text-Book of Logic. By SYDNEY HERBERT MELLONE. William Blackwood and Sons, Edinburgh and London, 1902.—xiv, 362.

The Principles of Logic. By HERBERT AUSTIN AIKINS. Henry Holt & Co., New York, 1902.—x, 489.

To one who is undertaking to write a text-book in logic, there appears always the proverbial difficulty of putting the new cloth into the old garment. For he finds himself confronted by the following dilemma. If he seeks to give an adequate representation of the traditional logic, there is the danger that he may leave the impression that logic as a critique of the reasoning process is artificial, indirect, and needlessly involved, and that a few simple common sense principles, easily formulated and as easily applied, might enable one to reason equally well and at the same time provide against all possible fallacy. If, on the other hand, the traditional treatment of logic is omitted altogether, or inadequately or indifferently presented, then some of the most fundamental principles of thought are neglected, and although they may be presented in another form, nevertheless a serious loss has been sustained in depriving the student of an acquaintance with the sources of logic which are to be found in the early Greek philosophy. For it is at these sources that he discovers a clearness in statement, a precision in definition, a subtle appreciation of fine distinctions and of remote relations which remain forever undisclosed to a surface inspection; above all, he there acquires a vocabulary which will prove invaluable to him in the larger field of general philosophy. Contact with the Greek mind in the process of analyzing itself is a bracing discipline, giving both power and facility to the reason.

The authors of the two books now before us have appreciated the difficulties of their task, and have consistently endeavored to impart life to the traditional treatment of logic. They seem determined that these dry bones shall live, and each in his own way has in a considerable measure succeeded. Professor Aikins is the more radical of the two in his general method. He discards the traditional treatment of the syllogism, and substitutes a machinery of criticism peculiarly his own, whose practical working is mediated by quite an elaborate system of symbols. The traditional rules of the undistributed middle, and that of the illicit process of the major or minor terms, are referred to only incidentally and that in a footnote. Professor Aikins presents different canons of criticism which vary for the four figures. This brings to the fore the discussion of the differences which underly the four figures. Also, in treating the fourth figure, he is compelled to use the traditional process of reduction. It would be better

to condense the subjects of figures and of reduction rather than to dwell upon them at length as Professor Aikins does. It is the one part of the traditional treatment above all others which may be curtailed without disadvantage. Moreover, it is a question whether the traditional rules may not be preserved and yet rendered quite as objective as the various canons which are here substituted for them. It would seem, too, that an elaborate symbolism tends to make the process of criticism somewhat mechanical and certainly indirect. The invalidity of reasoning should be immediately apparent to the student, and it should be possible also to refer it directly to some simply formulated principle of thought, without the aid of any process which is conducted by means of symbols. Professor Aikins, however, has been most successful in his endeavor to give concrete living expression to abstract and formal statements, and also in enriching the text by illustrations possessing present interest and appositeness.

Dr. Mellone in his exposition has kept more closely to Aristotle. By so doing he has preserved the philosophical spirit of Aristotle, and has thus avoided the more scholastic features of the traditional logic. At the sources there is life and vigor, which in the subsequent development of logical theory became feeble and deadened, if not wholly dead. The author insists that Aristotle dealt with the fundamental logical principles and distinctions in a manner which fully appreciated the wealth of concrete significance attaching to them. It is by a return to the Aristotelian point of view that he hopes to present the traditional logic in such a way that the student will not feel that it is unworthy of his attention. In the course of his treatment, he has endeavored to present some of the simpler and more interesting questions which have emerged among the modern logicians in the discussions of Sigwart, Bradley, and Bosanquet. This adds much to the general interest of the subject. The concluding chapter of the book takes up some of these questions more in detail, which serves as an excellent introduction to the modern logic. It would have been better, it seems to me, had the author placed Chapter IV, "On the Import of Propositions and Judgments," after his exposition of the traditional logic. In its present position, it separates the two subjects of mediate and immediate inference. The questions which it raises concern the general theory of logic, and might properly be discussed in connection with his last chapter. Also the position of Chapter VI, "On the Predicables, Definition, and Classification," might advantageously be changed. As it is, it comes between the discussion of the categorical syllogism and that of the hypothetical. It breaks up the continuity of the presentation of the subject matter, and would be more effective were another position assigned to it. The treatment of opposition and immediate inference might be condensed with advantage. A strange mistake in definition, evidently a typographical error, appears in the text where the author defines the major term of the syllogism as the subject, and the minor term as the predicate of the conclusion (p. 122).

Dr. Mellone's discussion as to the nature of the Aristotelian Enthymeme, and the Aristotelian Paradeigma is interesting and valuable. His illustrations and examples are also of the kind which possess life and concrete significance.

JOHN GRIER HIBBEN.
PRINCETON UNIVERSITY.

Shakespeare's Portrayal of the Moral Life. By FRANK CHAPMAN SHARP. New York, Chas. Scribner's Sons, 1902—pp. xiii, 224.

The very modesty of Professor Sharp's claims for this book makes it difficult to discover its aim. From its title, it might conceivably be a work in literary criticism, psychology, or ethics; but it is prevented from being any one of these by the author's verbal disavowal and actual use of all three methods. "Not merely how he criticised but also how he generalized are subjects that alike fall outside the inquiry that is here proposed" (Preface, p. xi); so this is not a study of Shakespeare's art. "How far these offspring of a poet's imagination resemble the men and women with whom scientific ethics attempts to deal, I have in the main refrained from considering" (p. xi). The topic of moral pathology constitutes an admitted exception to this plan, and is, accordingly, quite out of keeping with the rest of the book, though it is distinctly the most interesting part. So psychology is sporadic. As for ethics, Professor Sharp announces at the outset that the book bears only upon the descriptive or psychological and anthropological branch of that study. Thus the result is restricted to a description of the moral consciousness of Shakespearian characters. Furthermore, it appears in the course of the book that (*e. g.*, with reference to egoism and altruism) "we find mirrored in Shakespeare's world the chaos of opinion on this subject which prevails in the society by which we are surrounded" (p. 13). This statement is doubtless sound, but the author nowhere states the general principle of interpretation which sums up this and the similar generalizations that abound in late chapters. Shakespeare exhibits the morality of society, or custom, as sanctioned by common opinion. To demonstrate this in detail without formulating it, is simply tedious, and almost ludicrous when it leads to such conclusions as this: "It will now be clear that altruism is represented by Shakespeare as one of the most important factors in the moral life" (p. 7).

One further difficulty remains. Though Professor Sharp does not claim that such a study as this can solve the problem of reducing "the moral judgments of mankind to a consistent and reasonable system" (Preface, p. x), he arrays Shakespeare and Kant against one another as antagonist and protagonist of "Transcendentalism." Moral pathology is held to be the death-blow to the Kantian ethics. If any ethical system was ever constructed upon critical and logical rather than psychological grounds, it would seem to be that of Transcendentalism, and it is difficult to see what the discovery of "incorrigibles" has to do with "that which would approve itself to a mind cognizant of, and sensitive to, all the facts of human experience" (p. x).

What usefulness the book has lies in its array of cases that might be subject matter for further study from a psychological or ethical point of view, or with a view to the understanding of Shakespeare's art of portrayal. But the present treatment is too incomplete to be a compendium, even were it not always possible, and vastly more illuminating, to go to the plays themselves. Professor Sharp writes well and has produced a readable book, which, if not profound, serves to mark again the fact that with Shakespeare interpretations are out of the question, unless you are prepared to interpret the universal experience of men.

RALPH BARTON PERRY.

HARVARD UNIVERSITY.

The State, Specially the American State, Psychologically Treated. By DENTON J. SNIDER. St. Louis, Sigma Publishing Co., 1902.—pp. 561.

The reader of Dr. Snider's earlier work, *Social Institutions*, or of the review of it in the January number of THE PHILOSOPHICAL REVIEW, will remember that in his system Family, Society (*i. e.*, the industrial order), and the State constitute the three secular institutions. In that book, the exposition of the State was passed over with the promise that the subject should be treated at length in a separate work. The volume before us is the fulfillment of that promise. It should be regarded as a constituent part of the former work, though in separate covers. Accordingly, what was said of that book in a general way as to method, style, and point of view applies also to the present volume. The Hegelianism is still present and even more conspicuously Americanized. As Hegel founded his theory of the State on the Prussian model, though to a considerable extent unconsciously, so Dr. Snider constructs his quite consciously on the American model. The work consists of three parts—first, a general preliminary statement of the theory of the state (pp. 5–57); second, a dialectical interpretation of the American constitution (pp. 58–381); and third, an exposition of the nature of the state in three aspects: (1) the positive state, (2) the negative state, and (3) the evolution of the state (pp. 382–496). In an appendix (pp. 497–561) is republished an essay on "The American State," written some thirty years ago and containing the germs of the present book.

A social institution and especially a state, in Dr. Snider's view, is an organism. But this institutional organism differs from those of a lower type in that the members of it are free, self-conscious selves, who call forth an organic world whose object is to secure them all associated together in self-conscious freedom. "Every will, when it acts, implies the state. . . . The unity of diverse wills, being made objective and existent in the world by its own inner native character (such will is not will unless it objectifies itself), becomes therefore a will which is object and acts in the world — becomes *instituted*, or an institution. Here lies the primal psychical nature of all institutions, which we have so often called will actual-

ized. But the state, which is our present theme, is that form of will actualized whose end is to secure will through the law" (p. 46.)

What, then, is this self-objectifying will? It is not, according to our author, the mere will of all acting in common. Neither is it, in his view, the will of a general personality which, as a higher individual, is set over the individual members of the state. The state is not a person, he says. But how can there be a will which is no person's will? Dr. Snider puts this question himself and answers it by saying that the individual will is subjective, but the institution is will as objective. Such a will separate from the person would seem to be better called force or energy merely. But this conclusion is met by the assertion that it would imply that the state is determined by something outside of itself. "No power or force can have itself as end or content except the will." But how can a 'will,' which is not the will of a conscious self, have itself or anything else as end? It is only in that indissoluble unity with knowing and feeling constituting a genuine self that we can even conceive of will acting for an end. Will, apart from a conscious self, is a pure abstraction. It does not conduce to clarity of thought to call something by a name which, it is necessary to explain, does not mean what it does mean. It would be better to say at once that we are dealing with something unique and indefinable. A predicate emasculated of its essential content is a delusion and a snare. To say that the state has a psychical nature but no *psyche*, is a roundabout way of saying that it is a unique entity that cannot be described in psychological terms. Such a characterization, however, even if it does not tell what it pretends to, has the merit of carrying our thought of the state beyond the notion of a mechanical aggregate or of a biological organism.

"The best explanation of the meaning and end of the state in general may be found in the last particular manifestation of it in the movement of history." With this thought the author introduces the discussion of the American constitution and connects it with his general theory. Of course the constitution is found to be a true trifoliate flower of the dialectical tree. We cannot follow out here all the intricacies of the tripartite analysis many times repeated. As an illustration of the methods and results, we may quote the author's own summary of the three main divisions. These are as follows: "I. The conception of the constitutional state as the Union of States, whose ultimate end is to secure 'the blessings of liberty to ourselves and our posterity,' or to will the free-will of all more adequately by this new state.— The preamble. II. The law-producing process of the constitutional union, setting forth and ordaining the triune movement of the governmental powers — legislative, executive, and judicial — which produces law in its completeness. Here lies the principle of the Federal Union as such, federating and unifying the already existent states into one self-governing whole.— The first three articles. III. The state-producing (or reproducing) process of the constitutional union; the third act of the total movement in which the union returns upon itself and keeps repro-

ducing itself in a never-ending cycle. . . .— The last four articles. In brief, we may say, that in the constitution the union-producing state passes over into the state-producing union through the organization of the three governmental processes which enact, execute, and adjudicate the law" (p. 63). The state-producing function of our system, the author regards as its unique and preëminent excellence. In this he finds the supreme expression of the political instinct in man. Aristotle enunciated the truth that man is a political animal. For him and his age political meant city-producing; in mediæval and modern Europe, it came to mean state- or nation-producing; but in America it means that man produces the state which is itself state-producing. The analysis is sometimes over-refined, sometimes arbitrary. The attentive reader, however, will find much that is valuable and suggestive in this interpretation of the constitution.

In the third grand division of the book, the author develops his general theory of the state. The most original feature of this exposition is his "institutional" classification of the historical forms of the state. Corresponding to the three secular institutions — family, society, state — we find: "I. The parental state, in which the parent is the ruler given by nature; this form of state when civilized belongs specially to the Orient, and is expanded into the empire-state of Asia. II. The social state, in which the single-state appears as an independent member of a society of states, which society is continually seeking to become a political unity. Such is, in general, the European state, always showing a struggle between some form of the single-state and some form of the empire-state. III. The state-producing state, or the federal union, in which the European conflict between the single state and the empire state (or central authority) is reconciled and transformed into a process of unity whereby the single state produces the empire-state and the latter (the federal union) produces the single state. This is distinctively the Occidental State, as different from the Oriental and the European" (p. 412).

The work as a whole is a strong exposition of the positive conception of the state. It is an effective protest against the widespread fallacy that government is a necessary evil. However one may estimate the work philosophically, it would do a great public service if the book should inspire some writer to set forth its fundamental teachings, stripped of dialectical and psychological verbiage, and in a form to reach the popular mind. In the midst of the many disintegrating influences of the present day, it would make powerfully for social stability and progress, if such truths as the following could be generally understood and assimilated. "The state with its law is not a transitory phenomenon in human progress; it does not vanish with man's greater perfection, but is to become more perfect with him. . . . The man who denies government denies his self as a reality, making himself a mere inner shadow, or subjective phantasm which exists for him alone. Without government mankind would be a Hades of wan-

dering ghosts, embodied, it is true, but otherwise having no actual objective existence" (pp. 383, 405).

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The following books also have been received:

The Development of Modern Philosophy, with other Lectures and Essays. By ROBERT ADAMSON. 2 Vols. Edinburgh and London, Wm. Blackwood & Sons, 1903.—pp. xlviii, 358; xv, 330.

Contemporary Psychology. By GUIDO VILLA. Translated from the Italian by HAROLD MANACORDA. London, Swan Sonnenschein & Co., 1903.—pp. xv, 396. $2.75.

The Pathway to Reality. By RICHARD B. HALDANE. New York, E. P. Dutton & Co., 1903.—pp. xix, 316. $3.00.

Outlines of Psychology: An Elementary Treatise with some Practical Applications. By JOSIAH ROYCE. New York, The Macmillan Co., 1903.—pp. xxvii, 392. $1.00.

Spinoza's Political and Ethical Philosophy. By ROBERT A. DUFF. Glasgow, James Maclehose & Sons, 1903.—pp. xii, 516.

The Religions of Ancient Egypt and Babylonia. The Gifford Lectures on the Ancient Egyptian and Babylonian Conception of the Divine. By A. H. SAYCE. Edinburgh, T. & T. Clark, 1903.—pp. vii, 509. Imported by Charles Scribner's Sons. $3.50.

Experimental Psychology and its Bearing upon Culture. By GEORGE M. STRATTON. New York, The Macmillan Co., 1903.—pp. vii, 331. $2.00.

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The Creation of Matter; or Material Elements, Evolution, and Creation. By W. PROFEIT. Edinburgh, T. & T. Clark, 1903.—pp. ix, 176. Imported by Charles Scribner's Sons. $1.00.

The Study of Mental Science. Popular Lectures on the Uses and Characteristics of Logic and Psychology. By J. BROUGH. New York and Bombay, Longmans, Green, & Co., 1903.—pp. vii, 129.

The Significance of Sociology for Ethics. By ALBION W. SMALL. Printed from Vol. IV of the Decennial Publications of The University of Chicago. Chicago, The University of Chicago Press, 1902.—pp. 39.

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Primer on Teaching, with Special Reference to Sunday-School Work. By JOHN ADAMS. Edinburgh, T. & T. Clark, 1903.—pp. 129. Imported by Charles Scribner's Sons.

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Das Wesen des Mitleids. Von WILHELM STERN. Berlin, F. Dümmler, 1903.— pp. 50.

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Les limites du connaissable : La vie et les phénomènes naturels. Par FÉLIX LE DANTEC. Paris, Félix Alcan, 1903.— pp. 237.

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La morale de la raison théorique. Par ANDRÉ CRESSON. Paris, Félix Alcan, 1903.— pp. 301.

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L'image mentale. Par JEAN PHILIPPE. Paris, Félix Alcan, 1903.— pp. 150.

Le sentiment religieux en France. Par LUCIEN ARRÉAT. Paris, Félix Alcan, 1903.— pp. vi, 156.

Saggi per la storia della morale utilitaria. 1. *La morale di T. Hobbes.* Per RODOLFO MONDOLFO. Verona and Padova, Fratelli Drucker, 1903.—pp. 275.

L'elemento psichico : Studi sul metodo delle indagini psicologichi. Per VITTORE ALEMANNI. Torino, Unione Tipografico-editrice, 1903.—pp. vii, 330.

Se il piacere sia movente e l'emozione irreduttibile. Nota di E. REGÀLIA. Estratto dall'Archivio per l'Anthropologia e l'Etnologia, 1902.— pp. 46.

I dati della esperienza psichica. Per FRANCESCO DE SARLO. Firenze, Galletti e Cocci, 1903.—pp. 425.

NOTES.

Professor A. Ross Hill, of the University of Nebraska, has accepted a call to organize and direct a Teacher's College at the University of Missouri. Professor Hill's chair at Nebraska has been filled by the appointment of Dr. F. C. French, formerly of Vassar College.

We regret to announce the death of Edward E. Shieb, Professor of Philosophy in Tulane University.

Professor Münsterberg announces that $150,000 has been secured for the new Emerson Hall of Philosophy at Harvard University.

Dr. Moritz Lazarus, Honorary Professor of Philosophy at the University of Berlin, died on the 13th of April, in the 79th year of his age.

Dr. J. Uebinger, Professor of Philosophy at the Lyceum Hosianum, in Braunsberg, has been called to the University of Freiburg i. B. as Professor Ordinarius.

Professor Geo. A. Fullerton, of the University of Pennsylvania, will spend the next fifteen months in Europe.

At the University of Pennsylvania, Assistant Professors Newbold and Witmer have been promoted to full professorships, and Dr. E. A. Singer has been appointed to an assistant professorship.

Dr. G. W. T. Whitney, Fellow in Philosophy, Cornell University, has been appointed Reader in Philosophy at Bryn Mawr College.

Dr. R. S. Woodworth has been appointed Instructor in Psychology, and Dr. W. P. Montague, Lecturer in Philosophy, at Columbia University.

We give below a list of the articles, etc., in the current philosophical journals:

THE PSYCHOLOGICAL REVIEW, X, 3: *J. Mark Baldwin*, Mind and Body from the Genetic Point of View; Studies from the Psychological Laboratory of the University of Chicago: (I) *C. R. Squire*, Fatigue: Suggestions for a new Method of Investigation; (II) *Kate Gordon*, Meaning in Memory and in Attention; (III) *M. L. Ashley*, An Investigation of the Process of Judgment as Involved in Estimating Distances; Discussion and Reports; Psychological Literature; New Books; Notes.

MIND, No. 46: *F. H. Bradley*, The Definition of Will; *B. Russell*, Recent Work on the Philosophy of Leibniz; *B. Bosanquet*, Hedonism among Idealists; Discussions; Critical Notices; New Books; Philosophical Periodicals; Note: MIND Association.

THE HIBBERT JOURNAL, I, 3: *G. L. Dickinson*, Optimism and Immortality; *A. Seth Pringle-Pattison*, Martineau's Philosophy; *T. W. Rhys Davids*, Buddhism as a Living Force; *Josiah Oldfield*, The Failure of Christian Missions in India; *J. P. Mahaffy*, The Drifting of Doctrine; *B. W. Bacon*, Recent Aspects of the Johannine Problem: I. The External

Evidence; *P. W. Schmiedel*, Did Paul Write Romans? *G. B. Stevens*, Auguste Sabatier and the Paris School of Theology; Discussions; Reviews.

KANTSTUDIEN, VIII, 1: *F. Staudinger*, Cohens Logik der reinen Erkenntnis und die Logik der Wahrnehmung; *Frank Thilly*, Kant and Teleological Ethics; *Fr. Heman*, Kants Platonismus und Theismus; *E. Sänger*, Die neue Kantausgabe: Kants Briefwechsel; *Fr. Paulsen*, Kant und die Metaphysik; Recensionen; Selbstanzeigen.

ZEITSCHRIFT FÜR PSYCHOLOGIE UND PHYSIOLOGIE DER SINNESORGANE XXXI, 4: *Max Meyer*, Zur Theorie der Geräuschempfindungen; *Chr. Ladd-Franklin und A. Guttmann*, Ueber das Sehen durch Schleier, *A. Iwanoff*, Ein Beitrag zur Lehre über die Knochenleitung; Literaturbericht.

VIERTELJAHRSSCHRIFT FÜR WISSENSCHAFTLICHE PHILOSOPHIE UND SOZIOLOGIE, XXVII, 1 (Neue Folge, II, 1): *Julius Schultz*, Über die Fundamente der formalen Logik; *Robert Müller*, Über die zeitlichen Eigenschaften der Sinneswahrnehmung; *Paul Barth*, Die Geschichte der Erziehung in soziologischer Beleuchtung, I; Besprechungen; Philosophische Zeitschriften; Bibliographie.

Revue Philosophique, XXVIII, 4: *C. Bos*, Contribution a l'étude des sentiments intellectuels; *L. Winiarski*, Le principe du moindre effort comme base de la science sociale; *F. Le Dantec*, Instinct et servitude; Observations et documents: *P. Rousseau*, La mémoire des rêves dans le rêve; Analyses et comptes rendus; Revue des périodiques étrangers.

XXVIII, 5: *E. Durkheim et E. Fauconnet*, Sociologie et sciences sociales; *Duprat*, La négation: Étude de psychologie pathologique; *B. Ch. Mourre*, La volonté dans le rêve; Revue critique: *Th. Ribot*, L'association des idées d'après un livre récent; Analyses et comptes rendus.

REVUE DE MÉTAPHYSIQUE ET DE MORALE, XI, 3; *H. Poincaré*, L'espace et ses trois dimensions; *G. Lyon*, L'enseignement d'État et la pensée religieuse; *Criton*, Sixième dialogue philosophique entre Eudoxe et Ariste; Études critiques; Questions pratiques; Livres nouveaux; Revues et périodiques.

RIVISTA FILOSOFICA, VI, 2: *G. Villa*, Dei caratteri e delle tendenze della filosofia contemporanea; *F. Bonatelli*, Alcuni schiarimenti intorno alla natura del conoscere, del volere, della coscienza e della percezione; *R. Mondolfo*, L'educazione secondo il Romagnosi; Rassegna bibliografica; Notizie e pubblicazioni; Necrologio: G. Bovio; Sommari delle riviste straniere; Libri ricevuti.